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THE COLLABORATIVE PROBLEM - SOLVING APPROACH WITH
TRAUMATIZED CHILDREN: ITS EFFECTIVENESS IN THE REDUCTION OF
LOCKED SECLUSION IN AN INPATIENT PSYCHIATRIC SETTING

A Dissertation

Submitted to the School of Nursing

Duquesne University

In partial fulfillment of the requirements for
the degree of Doctor of Philosophy

By

Halana M. Finnie

May 2013

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Halana M. Finnie

2013

THE COLLABORATIVE PROBLEM-SOLVING APPROACH WITH
TRAUMATIZED CHILDREN: ITS EFFECTIVENESS IN THE REDUCTION OF
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By

Halana M. Finnie

Approved February 27, 2013

L. Kathleen Sekula PhD, APRN, FAAN
Professor
School of Nursing
(Dissertation Chair)

Rick Zoucha PhD, APRN-BC, CTN-A
Professor
School of Nursing
(Committee Member)

Alexander Klevzon MD
Associate Professor of Psychiatry and
Pediatrics, Mount Sinai School of
Medicine
(Committee Member)

Mary Ellen Glasgow PhD, RN, ACNS - BC
Dean and Professor
School of Nursing

Joan Such Lockhart, PhD, RN, FAAN
Professor and Associate Dean for
Academic Affairs,
School of Nursing

ABSTRACT

THE COLLABORATIVE PROBLEM-SOLVING APPROACH WITH TRAUTMATIZED CHILDREN: ITS EFFECTIVENESS IN THE REDUCTION OF LOCKED SECLUSION IN AN INPATIENT PSYCHIATRIC SETTING

By

Halana M. Finnie

May 2013

Dissertation supervised by Professor L. Kathleen Sekula

Aggressive or explosive behaviors in children typically occur within the context of a variety of psychiatric diagnoses and pose additional challenges when children present with histories of abuse. These behaviors are often interpreted as deliberate or noncompliant and management of these extreme behaviors often results in locked seclusion in most inpatient psychiatric settings. Locked seclusion remains controversial at best and raises legal and ethical issues regarding its safe and therapeutic use.

This retrospective quantitative study evaluated the effectiveness of the Collaborative Problem-Solving (CPS) approach as a less restrictive behavioral intervention on an inpatient child psychiatric unit with children ages 5-12 years that introduced the CPS approach during a nine month performance improvement project from July 1, 2006 – March 31, 2007. This study sought to determine what variables, if

any, impacted the use of locked seclusion before, during, and after CPS implementation and whether children with histories of abuse were placed in locked seclusion at a significantly different rate relative to admissions of children who did not have histories of abuse. Erik Erikson's Theory of Psychosocial Development served as the theoretical framework.

The closed medical record review involved 197 admissions and 167 children. All data were analyzed in two parts: the entire nine month period of 197 admissions and by time period, based on when the CPS intervention was introduced and implemented on the unit.

Length of stay was the only variable statistically significant during the nine month period (n=197) and third time period of January –March 2007 (n=65) when CPS was fully implemented and assessed. This finding suggests that a child's longer length of stay may have had a relationship with being placed in locked seclusion. When length of stay was controlled as an influence with history of abuse, the variable of interest for this study, children with histories of abuse for the nine month period were not significantly more likely of being placed in locked seclusion than children without histories of abuse; for the third time period, they were found to be almost eight times less likely of being placed in locked seclusion with an odds ratio of 7.81.

Although these findings suggest a favorable response to the CPS approach and that behaviors associated with traumatized children were normalized to that of their peer group, the results must be considered with caution. There were many limitations to the initial project and any inferred success with abused children and the CPS approach is based on statistical outcomes only. Other variables not measured or controlled must be

considered as potential influences that may have impacted these outcomes. As such, future research evaluating CPS effectiveness with traumatized children is recommended.

DEDICATION

To my wonderful family. I am thankful for your generosity of time and patience; for your encouragement when I thought I'd never finish; and for your unconditional love knowing what I have sacrificed these past eight years to achieve this degree.

Thank you for always being there, no matter what!

To my father, Trevor Alexander Finnie, who did not live to see me earn this degree but has been with me in spirit and in my heart each and every day and for whom I owe my love of learning and this academic achievement. Cheers!

ACKNOWLEDGMENT

There are many individuals who deserve to be acknowledged for without their assistance and support, this dissertation would not have been possible.

To the child psychiatric nursing and medical staff in New York City who actively participated in the original Performance Improvement project and to the adolescent psychiatric nursing staff who cheered us on and supported our efforts. Your collective dedication and commitment to our patients was evident each and every day and I thank you for sharing the desire of wanting to change our unit's culture and create a more compassionate patient-centered experience for these vulnerable children and adolescents. It was a pleasure working with you towards this important goal but mostly, for the pleasure of being your nurse manager for 10 years.

I would like to thank Dr. Alex Kolevzon, my external committee member. As my Unit Chief and colleague during the Performance Improvement project, you brought vision to our unit at a time when staff felt challenged. Your leadership with the staff brought renewed energy and commitment and the Performance Improvement project would not have occurred without your initiation and involvement throughout. I will always value your expertise as a Child and Adolescent Psychiatrist, but also for the humanity you restored to every child and adolescent you cared for and treated.

To Sarah Soffes, Clinical Research Coordinator for Dr. Kolevzon: It goes without saying that without you, I would not be writing these acknowledgments!! Thank you for your invaluable assistance with the hospital's IRB application. As a former employee, I could not have done it without you!! Literally!!

To my new professional family at Western Connecticut Health Network, Danbury Hospital, in Danbury CT. Thank you to the Department of Nursing, Dr. Moreen Donahue Chief Nursing Officer, my esteemed Director colleagues, Dr. Charles Herrick, Chair for the Department of Psychiatry, and to all the clinical and administrative staff on 6/7 West, Crisis Intervention, Community Center for Behavioral Health, Center for Children and Adolescent Treatment Services, and New Milford Behavioral Health for your encouragement, patience, and understanding during the final stages of this dissertation.

To Dr. Rick Zoucha, committee member and methodologist for this study: who knew research could be so enjoyable? I will never forget our chat in the corner back in 2004 when you and Dr. Sekula insisted that a PhD was the only way to go. No regrets!! And I will never forget how much I have valued your wisdom at times when I needed support, thoughtful discussion when I needed redirection, and humor when I needed perspective! It is clear how much you love teaching and you have inspired me in more ways than you will ever know. Thank you!

To Dr. L. Kathleen Sekula, the Chair of my dissertation committee: for the past 11 years, you have been my Professor but mostly you have graciously served as my mentor. It goes without saying that above all, you have been the most influential in shaping my forensic nursing career, beginning in 2002 with the post- masters Forensic Nursing program. Throughout this very long journey, you have been a guiding inspiration for me. You have shared your knowledge and expertise freely and have been more than generous with your time, encouragement, and support. It has been through your example as a nurse clinician, teacher, leader, and friend that I owe you my sincerest gratitude and appreciation!

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CHAPTER I

1 INTRODUCTION

1.1 Overview of the Topic

The most common and arguably the most challenging problem referrals made to inpatient and outpatient child psychiatric settings are children who exhibit aggressive, defiant, angry, resistant, or non-compliant behaviors (Greene & Ablon, 2006; Paterson & Duxbury, 2007). These behaviors typically occur in the context of a variety of diagnoses, including attention deficit/hyperactivity disorder, oppositional defiant disorder, intermittent explosive disorder, and conduct disorder. Despite their prevalence in psychiatric settings, these behaviors remain poorly understood by the clinicians who treat them (Greene & Ablon, 2006) and pose additional challenges when children present with histories of abuse (Baren, Mace, & Hendry, 2008b). Research has shown that these behaviors have extremely harmful effects on the relationships between the child who exhibits them and the child's caregivers (Anastopoulos, Guevremont, Shelton, & DuPaul, 1992; Arnold & O'Leary, 1995; Greene et al., 2002).

Abused and neglected children have an increased risk of psychiatric symptoms and disorders, criminality, and substance abuse (Baren, et al., 2008b). Some symptoms include, but are not limited to aggression, violence, anger, explosiveness, non-compliance, and opposition. Clinicians encounter not only the acute effects of the abuse, but also frequently manage the long-term psychological sequelae (Baren, et al., 2008b). Although empirical and theoretical understanding has increased regarding the impact childhood trauma has on various developmental domains, there remains a lack of

understanding and clarity within existing research as to what extent psychopathology disrupts daily functions, psychobiological mechanisms of vulnerability, and whether symptoms may be considered a normal response to trauma (Caffo, Forresi, & Lievers, 2005). Due to the long term effects that trauma and abuse have on children and adolescents, mental health professionals must be thorough when assessing a child's pre-existing levels of psychopathology and level of functioning in relation to trauma (Caffo, et al., 2005).

For decades, extreme behaviors in children have typically been interpreted as willful, deliberate, intentional, noncompliant, or goal-oriented in most conventional treatment settings and attributed to inadequate parenting practices (Greene, 2005). These interpretations, which labeled the child as "manipulative," bratty," "out of control," "defiant," and "attention-seeking," became the driving force behind behavior modification strategies designed to motivate the child into more compliant behaviors.

The predominant approach for most inpatient psychiatric units has been behavioral conditioning within the context of a therapeutic milieu. This highly structured environment of unit rules and organization, unit culture and interactions (Greenblatt, Levinson, & Williams, 1957) is defined on admission and is consistently reinforced by staff through group activities, activities of daily living, and social interactions. Behavioral or operant conditioning, developed by B.F. Skinner, identifies the acceptable and non-acceptable behaviors with which predetermined rewards and positive and negative reinforcers and consequences provide incentives for the child to increase compliance with adult directives as the desirable outcome (Van Wagner, 2010b).

On inpatient psychiatric units when a child or adolescent exhibits increased physical aggression to the point of harming self or others, the use of locked seclusion or four-point restraints may be initiated to contain these behaviors. Although this extreme intervention has remained part of the inpatient management of physical aggression or violence exhibited by psychiatric patients for years, it remains controversial at best, raising both legal and ethical issues regarding the appropriateness of its use as a safe and therapeutic treatment technique (Sourander, Ellila, Valimaki, & Piha, 2002).

Advocates of the use of mechanical or physical restraints believe this external intervention provides a therapeutic benefit to the child or adolescent with a psychiatric illness by assisting them in achieving internal controls (Bath, 1994). Although sensitive use of restraints in response to a child's need for protection can be justified, the potential for misuse remains a concern (Sourander, et al., 2002). In light of the increased awareness that children who have been abused or maltreated exhibit increased psychiatric, behavioral, and physical disturbances, the use of restraints and locked seclusion sparks ambivalence that such interventions may be construed in and of itself as abuse or punishment, while opposing views will argue that failure to intervene to protect the child from harming self or others is just as abusive (Sourander, et al., 2002). Although faulty assumptions persist in their continued implementation, no research evidence has demonstrated that restraints and locked seclusion are therapeutically effective (W. K. Mohr & Anderson, 2001) or evidence-based with children (Finke, 2001). Research supports that aggressive children who are already predisposed with multiple risk factors may experience further damage to their psyche when punitive and/or isolative

interventions are employed as a behavioral management technique (W. K. Mohr & Mohr, 2000).

1.2 Background of the Study

In recent years, researchers have attempted to re-conceptualize non-compliant behaviors, its causes, and techniques that provide safe and effective interventions. Operant conditioning and other coercion models have been unsuccessful as they neglect to incorporate the dynamics between the child and the child's caregiver (K. Regan, Curtin, & Vorderer, 2006).

Early attachment security, as theorized by John Bowlby, emphasizes the importance of a healthy relationship and connection between the caregiver and child as being essential to the development of an independent, mentally healthy child, and how easily that connection can be disrupted through separation, deprivation, and bereavement (Bretherton, 1992). Erik Erikson's theory of psychosocial development illustrates that one's personality develops over time through a series of stages. His first two stages, Trust vs. Mistrust and Autonomy vs. Shame and Doubt respectively, define the essential elements of psychosocial development that shape one's identity and ability to handle conflict. If a child successfully develops trust in the earliest stages of life, the world for that child is perceived as safe and secure. If caregivers, however are inconsistent, rejecting, or emotionally unavailable, the child feels mistrust and experiences the world as unpredictable, inconsistent, and fearful (Van Wagner, 2010a).

Many children admitted to inpatient psychiatric settings already experience insecure attachment relationships with primary caregivers that are often heightened by the separation caused by hospitalization. For children who have histories of trauma,

coercive models that impose punishments such as time-outs or room restriction, locked seclusion or restraints further exacerbate symptoms of mood lability, hypervigilance, irritability, sleep disturbance, anxiety, withdrawn or explosive behaviors (Greene, Ablon, & Martin, 2006).

Health care professionals who care for children work hard at building trusting relationships with them (Bricher, 1999). The act of cultivating and preserving a trusting relationship with a child already predisposed to mistrust can be challenging, especially when it is necessary for staff to carry out painful or upsetting procedures or interventions (Bricher, 1999). The trusting relationship between clinical staff and the child is especially important as it counterbalances the child's vulnerability (Bricher, 1999). Trust can easily be broken if the child feels vulnerable in an environment perceived as unsafe or frightening. This is especially true for children with trauma histories who already feel vulnerable and approach their lives with mistrust, suspicion, and fear. It is imperative that healthcare providers remain sensitive to the negative impact any procedure or intervention may have that may potentially re-traumatize or evoke memories of previous traumas (K. Regan, et al., 2006). Seclusion and restraints are two interventions that may create more harm than good (Finke, 2001). Staff often assume a punitive attitude in their approach to setting limits and are perceived as disciplinarians. Subsequently, staff unintentionally replicate the emotional dangers of the child's home environment, recreating trauma (Greene & Ablon, 2006). Establishing and maintaining trust requires an honest and sincere approach, one that conveys genuine respect and empathy (Bricher, 1999).

According to Greene and Ablon (2006), “children do well if they can” and do not choose to be explosive or aggressive. They assert that extreme behaviors are often triggered by frustration caused by cognitive deficits, grouped into five domains: language processing, cognitive flexibility, executive functioning, social functioning, and emotional regulation (Greene & Ablon, 2006).

The Collaborative Problem-Solving approach (CPS) (Greene & Ablon, 2006) is a treatment model that re-conceptualizes the conventional belief that children who exhibit explosive behaviors, temper tantrums, or refusal to follow direction do so willfully and deliberately. The principles of the CPS model are straightforward: by appropriately identifying a child’s cognitive deficits, clinicians can develop an effective plan of care that teaches the child flexibility, problem-solving, frustration tolerance, and can provide opportunity to intervene before the child loses control. Compassionate and respectful collaboration with choices, education, and proactive interventions replace the traditional reactive interventions that are typically more restrictive and punitive in nature. This collaborative approach also considers the compatibility of the caregiver with the child and nurtures independent decision making and autonomy, reinforced by Erikson’s second stage of development for children that typically find themselves stuck in a downward spiral of shame and doubt regarding their explosive behaviors, their relationships with others, and sense of self in the world (Van Wagner, 2010a).

The findings of Greene and Ablon’s research showed a direct correlation between the CPS approach and positive patient outcomes such as increased trust with the caregiver, increased behavioral control, increased participation in treatment, and decreased use of mechanical restraints. Although the psychopathology of trauma was

addressed in their study, the researchers did not differentiate between children who had histories of trauma and those who did not in their subsequent findings.

During my nine-year tenure as the Clinical Nurse Manager of a 23-bed acute care inpatient child and adolescent psychiatric unit in a large teaching medical center in New York City, consistency of staff training and demonstration of appropriate interventions with aggressive children had become a growing concern with the staff who worked this floor. This concern for staff consistency and clinical competency was heightened at the beginning of 2005 when the unit's length of stay was reduced to 14 days or less in response to managed care edicts and reimbursement. As a by-product of this reduction, rapid patient turnover created increased patient acuity on the unit. Patients were no longer able to receive the benefits derived from a longer-term hospitalization. What was once considered one of the most desirable patient care units on which to work in the 1171 bed facility was now considered undesirable and potentially dangerous, resulting in increased staff and patient injuries, increased use of security to assist in the management of aggressive patients, increased crisis interventions including locked seclusion and restraints, and increased use of PRN medication for agitation and aggression.

Recognizing that staff morale was low and that staff were no longer feeling capable of maintaining a safe and therapeutic environment with the rapid patient turnover and acuity, which at that time was approximately 14 days or less, the clinical and administrative team of the unit determined a paradigm shift in our approach to patient care and staff involvement was necessary in order to provide a safer and more therapeutic patient and staff experience. This included a radical departure in unit philosophy and modification of past practice whereby behavior modification and reward systems were

used to reinforce appropriate behaviors and time-outs and more restrictive interventions such as locked seclusion and restraints were used for aggression. These interventions were the norm but no longer deemed effective. After extensive discussions and literature reviews, the Collaborative Problem-Solving approach was selected for a performance improvement initiative to determine whether this award-winning approach of treating explosive children would effectively translate to our 15-bed child inpatient setting.

We were inspired by the success of one inpatient program at the Cambridge Hospital in Massachusetts. In 2001, Bruce Hassuk MD, medical director, and Kathy Regan RN, nurse manager, adopted the principles of the Collaborative Problem Solving Approach in the re-design of their inpatient child and adolescent unit. Departing from the traditional consequence-based culture, they renamed their program “Open Arms” which reflected their goal of providing humane and effective care to patients admitted to their unit for explosive behaviors. Ninety-five percent of the patients on the child psychiatry unit were admitted for explosive behaviors. Prior to implementation of the Open Arms Program, their use of seclusion and restraint was double the Massachusetts state average. Since implementation, the Cambridge Hospital child psychiatry unit is devoid of mechanical restraints, locked seclusion, and physical holds exceeding five minutes, and serious staff injuries (K. Regan, et al., 2006) (The Open Arms Program of the Cambridge Hospital, 2003).

As a result of the positive outcomes in the Cambridge Hospital’s Open Arms program, our child unit in New York embarked on its own nine month project based on the CPS model. For clarity, this initial project will be identified as Phase 1. The proposed

study for my dissertation will be a continuation of that project and will be identified as Phase 2.

The overall aim of the Phase 1 project was similar to the aim of the Open Arms program: 1) adapt the therapeutic milieu of the unit to focus on improving interactions between patients and providers; and 2) replace old staff values, such as adherence to group norms, consistency, and staff control with new values of nurturance, providing learning opportunities and choices based on the individual needs of each patient (K. Regan, et al., 2006).

1.3 Purpose of the Study – Dissertation (Phase 2)

The purpose of this retrospective quantitative study is to analyze data that was collected over a nine month period from July 2006-March 2007 as part of a performance improvement project that implemented the Collaborative Problem Solving approach with its inpatient psychiatric child population, ages 5-12 in addition to collecting and analyzing data not previously collected, such as psychiatric diagnosis and presence of trauma or histories of abuse.

The initial analysis of this project showed an overall decrease in PRN medication use, a decrease in locked seclusion on the dayshift, a decrease in injuries, and a decrease in the need for security to provide a “hands-on” intervention during a child’s explosive episode. Although there were many limitations to this performance improvement project, the outcomes were decidedly favorable based on the variables identified. However, an evaluation of the types of patients who were most responsive to this approach, such as children with a specific psychiatric diagnosis or children with histories of child abuse, neglect, or trauma were not examined.

This study will take the Phase 1 project one step further and re-analyze the locked seclusion data specifically to determine which patients were most responsive to the Collaborative Problem Solving Approach and which variables impacted those responses.

1.4 Research Questions

- 1) *What were the variables significantly associated with a child being placed in locked seclusion?*
- 2) *Did children with histories of abuse evidence a significantly different rate of being placed in locked seclusion relative to admissions of children that did not involve histories of abuse within the context of the CPS intervention?*

1.5 Definition of Terms

Child Abuse – Any recent act or failure to act on the part of a parent or caretaker that results in death, serious physical or emotional harm, sexual abuse or exploitation; or an act or failure to act that presents an imminent risk of serious harm.

("The Keeping Children and Families Safe Act of 2003," 2003).

Trauma – A reaction to a traumatic situation or event that devastates a child's ability to function and cope and inhibits the child from moving forward with life in a normal manner. Multiple causes include child abuse or neglect, crisis situations, family violence, extreme environmental events such as chronic poverty or homelessness, or prolonged separation or absence of a supportive caregiver (Green, 2009). For the purpose of this study, trauma refers to child abuse in the categories of sexual or physical abuse or other (emotional, psychological, medical neglect or family violence).

Explosive or Aggressive Behavior – A loss of self-control or a spontaneous, impulsive, observable act of anger. Aggression is often unplanned and occurs during times of stress.

This type of behavior can degrade, depreciate, threaten or hurt another or destroy an object (Zirpoli, 2008).

Restraints – As defined for Behavioral Health: Any method, chemical or physical, of restricting an individual’s freedom of movement, physical activity, or normal access to his or her body that is not a usual and customary part of a medical diagnostic or treatment procedure to which the individual or legal representative has consented.

(The Joint Commission, 2010a). For the purpose of this study, the use of restraints refers to four-point restraints. This involves securing all four limbs to a bed or stretcher with leather or nylon wrist and ankle straps to prevent the individual from harming him or herself or others.

Seclusion – As defined for Behavioral Health: “The involuntary confinement of an individual in a room alone for any period of time from which the individual is physically prevented from leaving.” (The Joint Commission, 2010b). For the purpose of this study, seclusion refers to locked-door seclusion. This intervention occurred in a designated, state-regulated standardized padded room, fitted with a door lock, observation window, and an observation camera.

Mental Health Provider – this is broadly defined as a licensed professional who is trained to manage various aspects of mental health care. Some providers strictly manage medications, some offer psychotherapy, some manage the inpatient milieu for safety, and some assist in locating services in the community. Mental health providers may hold different licenses, degrees and certifications. States generally license mental health providers and establish requirements for education, training and skills. The terms that describe mental health providers can vary from state to state (The Mayo Foundation for

Medical Education and Research, 2007). For the purposes of this study, Mental Health Provider refers to all licensed and non-licensed staff that provided direct patient care on the inpatient child psychiatric unit during the period of data collection between July 2006 and March 2007. Licensed providers included psychiatrists, psychiatric nurses, and social workers. Non-licensed staff included mental health associates and nursing assistants.

Interactions – are defined as mutual or reciprocal actions or influences (Merriam-Webster's Medical Dictionary, 2002). For this study, this will refer to reciprocal actions or influences between child psychiatric patients and mental health providers.

Therapeutic Alliance – encompasses aspects of the therapeutic relation that make it possible for therapist and patient to work together to accomplish therapeutic goals. Aspects of a therapeutic alliance include negotiating the therapeutic frame and necessary boundaries, neutrality and abstinence, empathetic attunement, trust, autonomy, authority, responsibility, freedom, and initiative. When these qualities become operative in the therapeutic relation, they provide the effective basis for a strong therapeutic alliance, which plays an essential structuring role at every step of treatment process (Meissner, 1996).

Interventions – are immediate, short-term, psychotherapeutic approaches, the goal of which is to help resolve a personal crisis within the individual's immediate environment. They are acts performed to prevent harm to a patient or to improve the physical, mental or emotional function of a patient (Mosby, 2009). In the context of the Collaborative Problem-Solving approach, interventions are most effective when they are well-matched to the needs of the child for whom the interventions are being designed (Greene & Ablon, 2006).

Collaboration – in a psychiatric context refers to a helping relationship between a family member and a mental health professional who share responsibility for a child with an emotional disorder (McGraw-Hill, 2002). According to Greene and Ablon (2006), the outcome of effective collaboration engages the child in a process of working toward a mutually satisfying resolution that addresses both adult and child concerns (Greene & Ablon, 2006).

1.6 Assumptions

This retrospective quantitative study includes the following assumptions: (a) the day shift staff were effectively trained and proficient in the philosophy and tenets of Collaborative Problem-Solving approach; (b) the day shift staff implementing the CPS interventions were consistent in their approach with all patient encounters, including explosive episodes; (c) the data collected during the 9-month timeframe of the performance improvement project (July 2006 – March 2007) was based on accurate documentation of patients involved in explosive events that resulted in locked seclusion and restraints; (d) the interpretation that the CPS approach was effective based on the decreased use of restraints and seclusion on the dayshift as compared with the increased implementation of these interventions on the evening and night shifts where CPS training did not occur is accurate.

1.7 Limitations of the Study

The purpose of the proposed study is to analyze the variables that potentially impacted the responses of child psychiatric patients in a therapeutic milieu that implemented the Collaborative Problem-Solving approach, as measured by the decreased number of locked seclusions that were implemented on the day shift. The generalizability

of findings may be affected by the following limitations of this study, including patient variability based on the child's hospital length of stay; diagnosis; history of trauma and type; the location of one geographic location for data collection; the limitation of training only day shift staff as the control; the culture changes and dynamics of the therapeutic milieu that occurred over the course of data collection; and the inherent connection the researcher had to the inpatient program as the Clinical Nurse Manager. Although the connection as the Clinical Nurse Manager may be perceived as a bias to the process, it may also be viewed as a catalyst for implementing future quality improvement initiatives and services based on the outcomes of the study.

1.8 Significance of the Study to Nursing

When a child becomes mentally ill, hospitalization in a psychiatric facility is recommended as one of a range of available treatment options (American Academy of Child and Adolescent Psychiatry, 2004). Psychiatric hospitalization is a serious event when a child has emotional, mental or behavioral disturbances and can no longer function at home, at school, or in the community. Although there is recognized benefit to an intensive short-term psychiatric admission, the act of legally committing a child to a locked psychiatric environment for care creates additional anxiety, psychological or emotional trauma for both parent and child and adds to the disruption in continuity of the parent-child relationship (Wizner, 2002). Mental health providers play a crucial role in facilitating adjustment to the hospitalization by acknowledging these reactions and providing care in a safe and therapeutic manner (American Academy of Child and Adolescent Psychiatry, 2004). Satisfaction is essential to both the engagement in and continuation of treatment for the child (Riley, Stromberg, & Clark, 2005).

Current practice parameters with respect to locked seclusion and restraints have several mandates: (1) that the use of more restrictive interventions, such as locked seclusion and four-point restraints be used only to prevent dangerous behaviors to self and others; to prevent serious disruption of the therapeutic treatment milieu; or to be used only when less restrictive methods have failed; (2) restraint and seclusion should not be used as punishment for patients; for the convenience of staff or the clinical program; or to compensate for inadequate staffing (American Academy of Child and Adolescent Psychiatry, 2002; Greene & Ablon, 2006).

Psychiatric nurses in an inpatient setting are direct caregivers to patients; milieu managers of crisis intervention and prevention with patients; advocates of patient rights; and mediators and educators of families. According to Hildegard Peplau, psychodynamic nursing is the ability to understand one's own behavior, to help others identify felt difficulties, and to apply principles of human relations to the problems that arise at all levels of experience (Peplau, 1952). The nurse assists the patient in recognizing and understanding the problem(s) at hand and determines the patient's need for help (Howk, 2002). As such, the Collaborative Problem-Solving approach is a treatment model that supports the nursing process and all integral responsibilities associated with safe and therapeutic patient care.

It has been intimated that altering how limits are set on an inpatient unit may directly influence the reduction of using locked seclusions and restraints. According to the literature, there is evidence to support that certain styles of redirection and limit setting by staff precipitates increased assaults by patients (Ryan, Hart, Messick, Aaron, & Burnette, 2004). The Collaborate Problem-Solving approach and Greene and Ablon's

attempt to re-conceptualize non-compliant explosive behaviors and underlying causes is both therapeutic and humane. The CPS model addresses extreme behaviors in a safe and thoughtful manner that for decades have been negatively labeled and treated with strict behavior modification, PRN medication and the most restrictive interventions of locked seclusion and restraints.

The CPS approach is not a mainstream approach for inpatient psychiatric care as yet and there remains a gap in the literature as it pertains to the model's use with traumatized children. Abused children have a higher rate of psychiatric symptoms, dysfunctional families, criminality, and substance abuse and need for psychiatric services (Baren, et al., 2008b). Incorporating the CPS approach into inpatient child psychiatric treatment programs provides an effective and creative alternative for children with explosive, oppositional and defiant behaviors. According to Greene and Ablon, the CPS approach can be applied to situations and patient populations not discussed in their book and beg for further research. This research should include the effectiveness of the CPS model with traumatized children. Psychiatric nurses as the primary caregivers of hospitalized children are perfectly poised to conduct this research, especially forensic nurses working with this fragile and underserved population of patients. Without thorough knowledge and understanding of the interventions and their effects on hospitalized children with trauma histories, the need for change in both health care attitudes and treatment practices toward explosive and defiant children cannot be appreciated.

CHAPTER II

2 REVIEW OF THE LITERATURE

2.1 Introduction

The organization of this chapter and the review of the literature that follows will begin with the most current government statistics of child abuse and neglect published by the U.S. Department of Health and Human Services. The major issues and research associated with the hospitalization and psychiatric treatment of abused children will be explored, including the prevalence of behavioral and emotional disturbances in traumatized children; the inpatient psychiatric treatment for aggressive, explosive behaviors; the use of locked seclusion and restraints as interventions; and the Collaborative Problem-Solving approach and its efficacy with explosive, out of control children. The conceptual framework of Erik Erikson's Eight Stages of Psychosocial Development, as it pertains to the ego identity of the abused child, will be explored.

2.2 Child Abuse and Neglect – National Data

All 50 states, the District of Columbia, and the U.S. Territories have established mandatory child abuse and neglect reporting laws that require specific institutions and professions to report suspected abuse, neglect, or maltreatment to a child protective services agency (Administration for Children & Families, 2012). Based on standards set by federal law, each State has its own definition of what constitutes child abuse and neglect (Administration for Children & Families, 2012). The majority of States recognize four major categories of maltreatment: neglect, psychological maltreatment, physical

abuse, and sexual abuse. Any of these forms may be found separately or occur in combination (Administration for Children & Families, 2012).

For the Federal Fiscal year (FFY) 2011, more than 3.7 million (duplicate count) children were the subjects of at least one report of alleged maltreatment or abuse and received one or more dispositions by a Child Protective Services (CPS) agency (Administration for Children & Families, 2012). The duplicate count of child victims counts a child each time the child is found to be a victim. One-fifth of these children in this population were found to be victims. The unique count of child victims counts a child only once regardless of how many times the child was found to be a victim during the reporting year. The unique victim rate was 9.1 victims per 1,000 children in the population, approximately 676,569 victims of child abuse and neglect (Administration for Children & Families, 2012).

For FFY 2011, victim data were analyzed by relationship of duplicate victims to their perpetrators. For this analyses, a perpetrator was defined as the person responsible for the abuse or neglect of a child (Administration for Children & Families, 2012). The statistics were alarming:

- Four-fifths (81.2%) of duplicate perpetrators of child maltreatment were parents either acting alone or with someone else.
- Of the duplicate perpetrators that were parents, four-fifths (87.6%) were the biological parents.
- Women (53.6%) comprised a larger percentage of all unique perpetrators than men (45.1%); 1.3 percent were of unknown sex.

- Four-fifths (84.6%) of all unique perpetrators were between the ages of 20 and 49 years.
- Approximately two-fifths (36.8%) were victimized by mothers acting alone.
- One-fifth (18.9%) were victimized by fathers acting alone.
- One fifth (18.9%) of victims were maltreated by both parents
(Administration for Children & Families, 2012)

The most common forms of maltreatment and greatest proportion of children suffered from neglect. This finding was consistent with findings in prior reporting years. The data for unique victims was as follows:

- 78.5 percent of victims (unique count) suffered neglect.
- 17.6 percent suffered physical abuse.
- 9.1 percent suffered sexual abuse.
- 10.3 percent of victims experienced “other” forms of maltreatment, including “abandonment,” “threats of harm to the child,” or “congenital drug addiction.”

These percentages sum to greater than 100 percent as a child may have suffered more than one type of maltreatment and every maltreatment type was counted (Administration for Children & Families, 2012).

2.3 Traumatized Children – Prevalence of Behavioral and Emotional Disturbances

Children who have been severely maltreated may experience a wide range of psychosocial and psychiatric disorders with one or more co-morbidities. Approximately 60% to 90% of children with bipolar disorder will also have conduct disorder; 45% to 70% will have attention deficit hyperactivity disorder (ADHD); and approximately 50% will experience two or more anxiety disorders (Haugaard, 2004). Children who have been sexually abused exhibit symptoms and behaviors that require mental health services (Mullers & Dowling, 2008). Long term effects of abuse include but are not limited to ADHD, post-traumatic stress disorder (PTSD), withdrawal, sexualized behaviors, depression, violence, substance abuse, anxiety, bipolar disorder, suicidal ideation (Mullers & Dowling, 2008), criminality, persistently dysfunctional lifestyles (Baren, Mace, & Hendry, 2008a), and an increased risk of becoming perpetrators as adults (Jain, 1999). Maltreatment such as supervision neglect, physical neglect, physical assault, or contact sexual abuse have been associated with multiple adolescent health risks (≥ 8 out of 10) including fair/poor health, depression, overweight status, 30-day cigarette use, regular alcohol use, binge drinking, 30-day marijuana use, any inhalant use, serious physical altercations, and altercations resulting in harm to others (Hussey, Chang, & Kotch, 2006).

Suicidality has been identified as a risk factor in both childhood physical and sexual abuse (Krysinska, Lester, & Martin, 2009). A meta-analysis of the published research on the effects of childhood sexual abuse indicated a 150% increase in risk of becoming suicidal among sexual abuse survivors (Paolucci, Genius, & Violato, 2001).

Thirty-seven studies published from 1981 to 1995 that addressed depression, suicide, PTSD, poor academic performance, sexual promiscuity, and victim-perpetrator cycle were reviewed. Overall, the analysis found strong evidence to support the link between sexual abuse in childhood and subsequent short and long term effects on development (Paolucci, et al., 2001). In a community sample of women, one study found a significant relationship between sexual abuse and self-injurious behaviors, especially in participants who reported more frequent and intrusive abuse (Romans, Andersen, Herbison, & Mullen, 1995). Another study found that women diagnosed with depressive disorders who were victims of child sexual abuse had higher rates of suicide attempts and /or intentional acts of self harm than non-victims (Gladstone et al., 2004). Research exploring the experience of childhood trauma and the relationship between mixed types of abuse and neglect and suicide risk in adults has found a direct correlation. One longitudinal study of a community sample of young adults found significant psychological impairment and functioning, including higher rates of suicidal ideation and attempts in participants between ages 15 and 21 years who had histories of physical or sexual abuse as compared with participants with no histories of abuse (Silverman, Reinherz, & Giaconia, 1996).

Research strongly links early exposure of maltreatment to disruption in crucial normal stages of childhood development (Waite, Gerrity, & Arango, 2010). Increased stress hormones from abuse affects brain development in infants and young children, impacting brain growth, organization, and cognitive function (Paz, Jones, & Byrne, 2005). Child abuse victims frequently have anxieties, fears, and low self-esteem (Baren, et al., 2008a). A review of the research on the internalization and externalization of

behaviors, peer relationships, and school functioning of children physically abused and neglected was conducted by Staudt (2001). Of particular interest to this dissertation were the findings related to psychopathology and peer relations of children. Of the eight studies reviewed by Staudt regarding psychopathology, only four of the studies (Allen & Tarnowski, 1989; Cerezo & Frias, 1994; Kaufman, 1991; Kazdin, Moser, Colbus, & Bell, 1985) examined symptoms of depression in maltreated school-age children and young adolescents that closely matched the age range specific to this dissertation.

Two of the studies found that physically abused children exhibited increased signs of depression, feelings of hopelessness, lower self-esteem, and increased externalization in locus of control than non-abused peers (Allen & Tarnowski, 1989; Cerezo & Frias, 1994). These findings were consistent among children in other studies requiring psychiatric hospitalization for severe symptoms and behaviors (Kazdin, et al., 1985). Children with a history of past abuse and current abuse scored significantly lower on depression, hopelessness, and self-esteem measures than children with only past abuse or current abuse but not both (Kazdin, et al., 1985). An examination of the relationship between depression and maltreatment type found an association of depression with physical abuse and emotional maltreatment, such as parental rejection or psychological unavailability. There was no association of depression with neglect (Kaufman, 1991). The table below summarizes each study and their findings.

Table 1

Studies on Externalizing and Internalizing Behaviors in Maltreated Children

Study	Sample Size	Age Range (Years)	Maltreatment Type	Gender	Ethnicity	Dependent Variable
Allen & Tarnowski, 1989	36	7-13	Physical Abuse = 18 No Maltreatment = 18	F = 10 M = 26	Black = 20 White = 16	Depression; hopelessness; Self-esteem; locus of control
Cerezo & Frias, 1994	45	8-13	Physical Abuse = 19 No Maltreatment = 26	F = 15 M = 30	_____	Depression; attribution style
Kaufman, 1991	56	7-12	Maltreatment = 56	F = 29 M = 27	Black = 9 White = 37 Hispanic = 10	Depression
Kazdin, Moser, Colbus, & Bell, 1986	79	6-13	Physical Abuse = 79	F = 25 M = 54	Black = 22 White = 57	Depression; hopelessness; self-esteem

Staudt examined ten studies of maltreated children and the impact on peer relations. Of these, only three studies matched the age-range specific to this dissertation. One laboratory study found that maltreated children were more socially withdrawn than children not maltreated, with no difference in aggressive behaviors, although these findings may not be as generalizable as studies conducted in a child's natural setting (Jacobson & Straker, 1982).

Another study reported that abused children responded aggressively to the observed distress of peers; that both abused and neglected children responded aggressively to the observed aggressive behaviors of others; and that both resisted the interactions and offers of friendship of peers (Kaufman & Cicchetti, 1989). Children with histories of three types of maltreatment (neglect, physical abuse, and emotional abuse) were ranked by their peers as more disruptive than comparison children and those who experienced neglect or emotional abuse (Kaufman & Cicchetti, 1989).

The third study on abuse and peer relations (Salzinger, Feldman, Hammer, & Rosario, 1993) found that abused children tended to withdraw when observing peers in distress, although aggressive behaviors were observed but less frequently. Overall, physically abused children initiated fewer peer interactions, had fewer prosocial and more negative social behaviors and interactions, more antisocial behaviors, more externalizing behaviors, were less popular, and more likely to be rejected than non-abused children (Salzinger, et al., 1993). The researchers did find, however that of the 174 participants, 12 of the abused children were classified as popular, and 22 of the control group were classified as rejected. As such, the researchers emphasized the need to include protective and other underlying factors by which abuse and maltreatment affects outcomes as well as examining the risk factors for non-abused children (Salzinger, et al., 1993). The table below summarizes each study and their findings.

Table 2

Studies on Peer Relations of Maltreated Children (Salzinger, et al., 1993)

Study	Sample Size	Age Range (Years)	Maltreatment Type	Gender	Ethnicity	Dependent Variable
Jacobson & Straker, 1982	57	5-10	Physical Abuse = 19 No Maltreatment = 38	_____	White	Social Interaction; Hostility
Kaufman & Cicchetti, 1989	137	5-11	Maltreatment = 70 No Maltreatment = 67	“fairly evenly divided by sex”	White = 87%	Self-esteem, prosocial, aggressive, withdrawn behaviors
Salzinger, Feldman, Hammer, & Rosario, 1993	174	8-12	Physical Abuse = 87 No Maltreatment = 87	M = 71%	Black = 47% Hispanic = 46% White = 6% Asian = 1%	Sociometric status, social behavior, social networks

Although long term negative consequences caused by child abuse and neglect are significant and well documented, continued research is necessary to determine how specific forms of abuse (physical or emotional neglect, physical or sexual abuse, and other forms of abuse or maltreatment) impact different domains of functioning at varying stages of development (Knutson, 1995). However, of the various forms of abuse, it has been determined that sexual abuse has the strongest association with psychotic disorders in adulthood (Read & Agar, 2002).

2.3.1 Conceptual Framework – Erik Erikson

According to Erikson, a child is exposed to a multitude of opportunities to “identify himself, more or less experimentally, with real or fictitious people of either sex, with habits, traits, occupations, and ideas. Certain crises force him to make radical selections.” (Erikson, 1994a). These crises are viewed as decisive turning points for the child, creating increased vulnerability or strength to function effectively. The intensity of a child’s symptoms expresses the necessity to defend an emerging ego identity, which assists the child by his own perspective, to integrate the rapid changes taking place in all areas of his life (Erikson, 1994a).

One of the chief elements of Erikson’s theory of psychosocial development is the development of ego identity (Erikson, 1994b). Ego identity is the conscious sense of self developed through social interaction. Daily interactions with others, new experiences, and newly acquired information shape our ego identity, thus ego identity is ever changing across the lifespan. A sense of competence and mastery of skill also shapes and motivates behavior and actions. Each of the eight stages of Erikson’s theory of psychosocial development focuses on mastery and successful competence in a particular area of life.

This sense of mastery is referred to as ego strength or ego quality (Erikson, 1993).

According to Erikson, each stage represents a conflict that serves as a decisive moment in development for the individual. Conflicts and the manner in which they are resolved are catalysts for the success or failure of developing healthy ego identity. As such, the potential is high for both personal growth and failure (Erikson, 1993).

Table 3

The Eight Stages of Erikson's Theory of Psychosocial Development

(Cramer, Flynn, & LaFave, 1997)

Stage	Ages	Basic Conflict	Important Event	Summary
Oral-Sensory	Birth to 12 to 18 months	Trust vs. Mistrust	Feeding	The infant must form a first loving, trusting relationship with the caregiver, or develop a sense of mistrust.
Muscular - Anal	18 months to 3 years	Autonomy vs. Shame/Doubt	Toilet training	The child's energies are directed toward the development of physical skills, including walking, grasping, and rectal sphincter control. The child learns control but may develop shame and doubt if not handled well.
Locomotor	3 to 6 years	Initiative vs. Guilt	Independence	The child continues to become more assertive and to take more initiative, but may be too forceful, leading to guilt feelings.
Latency	6 to 12 years	Industry vs. Inferiority	School	The child must deal with demands to learn new skills or risk a sense of inferiority, failure and incompetence.
Young Adulthood	19 to 40 years	Intimacy vs. Isolation	Love relationships	The young adult must develop intimate relationships or suffer feelings of isolation.
Middle Adulthood	40 to 65 years	Generativity vs. Stagnation	Parenting	Each adult must find some way to satisfy and support the next generation.
Maturity	65 to death	Ego Integrity vs. Despair	Reflection on and acceptance of one's life	The culmination is a sense of oneself as one is and of feeling fulfilled.

According to psychologist John Bowlby, attachment is an emotional bond, a lasting connection between human beings. The earliest bonds formed by children with their caregivers have great impact that continues across the lifespan. Attachment serves to keep the child close to the mother, thus improving the child's chance of survival (Cherry, 2005). For the purpose of this dissertation, the first four stages of Erikson's theory are most pertinent, emphasizing the importance of healthy attachment, building trust,

achieving autonomy, taking initiative, and finding purpose and the consequences if stages are not successfully mastered.

Psychosocial Stage 1 – Basic Trust vs. Mistrust

The first stage of Erikson's psychosocial development theory is Basic Trust vs. Mistrust and occurs from birth to 18 months. It is considered the most fundamental stage of life. This is the infant's first psychosocial crisis where the infant's basic needs for food, sustenance, and comfort depend solely on the child's caregiver, typically the child's mother. Based on the consistency and quality of the caregivers, the child learns the ability to trust. The child's relative understanding of the world is formed by the consistency and quality of the interactions experienced with his parents. If the child experiences dependable warmth, affection, and regularity, then trust develops successfully. The child gains a sense of security and confidence in the world around him and feels secure, even when threatened. The virtue associated with successful mastery of this stage is Hope. In the absence of a secure environment, when needs are not met and caregivers are inconsistent, emotionally unavailable, rejecting, neglectful or abusive, unsuccessful completion of this stage will occur. This will result in anxiety, inability to trust, heightened insecurities, frustration, and an overwhelming fear of the world in general, causing increased dependency or paranoia (Child Development Institute, 2008; Cramer, et al., 1997; Erikson, 1994a; Niolon, 2000; Van Wagner, 2010a; Waters, 2007).

Psychosocial Stage 2 - Autonomy vs. Shame and Doubt

The second stage of Erikson's theory, Autonomy vs. Shame and Doubt, occurs approximately between ages of one and three. If parental interactions have been nurturing and consistent, the child will begin to assert independence, feeling self-assured with

found control, and proud rather than ashamed. It is a time when the child learns whether he can do things for himself or must continue to rely on others to have needs met. As mastery of elimination and motor abilities occurs, the child asserts more independence. This is expressed by walking away from the caregiver, making choices about what they will eat or wear, and choosing which toy to play with. If parents or caregivers positively reinforce and praise these attempts toward independence, continue to provide a strong base of security, show patience and encouragement while providing structure and support, the child's autonomy will develop, fostering a sense of self-sufficiency and belief they can handle problems on their own. The virtue associated with the mastery of this stage is Will. This sense of will helps the child accomplish and build self-esteem as he grows into adulthood.

Parents that are highly restrictive, harsh, ridicule, overly criticize, or demand too much too soon, can cause the child to feel defeated, inadequate in their ability to survive, overly dependent on others, develop low self-esteem, and experience extreme shame and doubt about their abilities. A reluctance to attempt new challenges and skills will develop, and can cause the child to grow up engaging in neurotic attempts to regain feelings of power, control, and competency. Obsessive behaviors may form as the need to follow rules and structure exactly will prevent future feelings of shame. Conversely, if parents are highly permissive and offer very few limits, structure, or guidance, the child can fail to gain any sense of shame or doubt and become overly impulsive. Avoidance and never allowing others to get close may also develop as the child believes this will prevent ever feeling ashamed again (Child Development Institute, 2008; Cramer, et al., 1997; Erikson, 1994a; Niolon, 2000; Van Wagner, 2010a; Waters, 2007).

Psychosocial Stage 3 – Initiative vs. Guilt

The third stage of Erikson's theory, Initiative vs. Guilt signifies the play age, the pre-school age. Between ages 3 and 6 years, children assert their control and power over the world more consistently, directing play and other social interactions, making up games, and initiating and planning activities with others. If given the opportunity, the child will develop a sense of initiative and feel more confident in their ability to make decisions and lead others. The main question for the child during this stage is am I good or am I bad? The child is learning new skills and the basic principles of physics. Round objects roll. Objects fall down, not up. The result of successfully mastering this stage is Purpose. Taking initiative fosters autonomy and the need to initiate and complete tasks independently and with purpose. This stage may include risk-taking behaviors and learning self-limits. Taking initiative may also develop negative behaviors as a result of disappointment and frustration for not being able to accomplish a task or achieve a desired outcome. In order to be successful, the child must learn to accept, without guilt, their own limitations and that certain behaviors or activities are not allowed, and feel guilt-free when exploring fantasies and when using imagination.

Caregivers that punish, criticize, or control the child's attempts to show initiative and be responsible, and do not provide a supportive environment for the child to make safe, realistic, and appropriate choices, will cause the child to develop a sense of guilt, which in excess can lead to self-doubt, guilt that what they want, need, or desire is always wrong or bad; inhibition, fear, and cause the child to isolate and remain on the fringe of groups. Conversely, too much purpose with little-to-no sense of guilt can lead to ruthlessness; achieving goals without regard for others. This lack of guilt can develop

into narcissism as well as antisocial behaviors in adulthood (Child Development Institute, 2008; Cramer, et al., 1997; Erikson, 1994a; Niolon, 2000; Van Wagner, 2010a; Waters, 2007).

Psychosocial Stage 4 – Industry vs. Inferiority

The fourth stage of Erikson's theory of psychosocial development occurs from age 6 to age 12. Through social interactions, this stage focuses on the child's sense of pride in his accomplishments and abilities. This is the school age stage. The main question for the child is how can I be good? There is a greater sense of relating to peers according to rules and a transition from free play to play with more structure and formal teamwork. Children grasp abstract concepts of space and time in more logical and practical ways, and are learning to accomplishment more complex skills, such as reading and writing. When successful, projects are initiated and seen to completion and the child feels good about what has been achieved. When commended by parents and teachers, the child will develop a sense of competence, a belief in their abilities and skills, and will begin to feel industrious with self-confidence. The result of successfully mastering this stage is Competence.

When initiatives are met with little or no encouragement, are severely restricted, ridiculed, or punished by parents or teachers, the child will feel inferior. The child will doubt his ability to succeed, thus preventing him from ever reaching his potential. If excessive, feelings of inferiority will develop into helplessness and inertia. Conversely, too much competency will drive the child into shallowness and becoming an adult too quickly (Child Development Institute, 2008; Cramer, et al., 1997; Erikson, 1994a; Niolon, 2000; Van Wagner, 2010a; Waters, 2007).

2.4 Staff Challenges with Inpatient Psychiatric Treatment for Children

When a child becomes mentally ill, hospitalization in a psychiatric facility is recommended as one of a range of available treatment options (American Academy of Child and Adolescent Psychiatry, 2004). Psychiatric hospitalization is a serious event when a child has emotional, mental or behavioral disturbances and can no longer function at home, at school, or in the community. The essential components of inpatient psychiatric care include the diagnosis of a psychiatric disorder, as defined by the criteria of the Diagnostic and Statistical Manual IV-TR and the development of an individualized treatment plan, including measurable goals and outcomes that will assist the child in improved functionality and stabilization. Ultimately, the goal is to discharge the child to a safe environment with continued outpatient treatment and services. Strategies to accomplish these goals may include behavior modification tools and contracts, medication, and the structure of a safe and therapeutic milieu. The therapeutic milieu is considered an integral part of the patient's treatment experience by virtue of the organization and culture of the unit, staff attitudes and norms, and staff interaction patterns (Greenblatt, et al., 1957). It is essential that the unit establish a philosophy of care that guides and shapes the unit's policies and procedures, unit culture, staff attitudes, norms and structure (K. Regan, et al., 2006).

2.4.1 Staff Responses to Histories of Abuse

Staff responses to children who are hospitalized with histories of abuse are an important variable when assessing the effectiveness of any treatment modality. Effective care begins when it is individualized to the needs of the child. Individualized care begins with staff asking the necessary questions pertinent to histories of abuse and neglect, then incorporating that information in the treatment identified as most appropriate for that patient (Read & Fraser, 1998).

As much as childhood abuse, neglect, and trauma have been consistently associated with psychiatric illness in both children and adults, there remains a paucity of clinical research that correlates the understanding of childhood trauma and subsequent sequelae that contribute to adult health issues with the role of the nurse in supporting education and management of this specialized population (Waite, et al., 2010).

Although there is recognition for the need to collect information about child abuse or traumatic events, researchers and clinicians face many practical and ethical questions about how to best accomplish this (Becker-Blease & Freyd, 2006). According to the authors, little research has been conducted on the costs and benefits of child abuse research. An important factor when considering the cost–benefit analysis as it pertains to the costs of not asking about child abuse has been largely ignored. This lack of research leaves researchers and clinicians to make decisions based on individual biases and beliefs about issues related to the prevalence of abuse, the likelihood of disclosure, the effects of child abuse, and the ability of abuse survivors to give informed consent (Becker-Blease & Freyd, 2006).

The authors cite the following obstacles to research most often expressed by researchers:

1. The Institutional Review Board won't let me ask participants about abuse
 2. I don't know how to ask and I'm not prepared to work with survivors
 3. Asking about abuse necessarily requires reporting abuse
 4. Asking about abuse means losing participants
 5. Asking about abuse exposes participants to unusual, upsetting stimuli
 6. It is unethical to ask participants to disclose stigmatizing information
 7. Questions about abuse directly cause harm
 8. Survivors are not emotionally stable enough to assess risk or seek help
 9. Asking participants about abuse has no direct benefits to participants
 10. Not asking is safest, because there are no costs to not asking about abuse
- (Becker-Blease & Freyd, 2006).

Nurses and other health care providers likely share similar concerns or objections about asking abuse-related questions (Waite, et al., 2010). They cite, however it is the “ethical imperative” of nurses to fully incorporate the biopsychosocial model into their care by focusing on the psychosocial causes of human suffering and to reflect on those issues in their clinical practice (Waite, et al., 2010).

One study conducted in New Zealand ascertained the responses of staff in an inpatient psychiatric unit, regarding knowledge that patients had been subjected to physical or sexual abuse, in childhood or adulthood (Read & Fraser, 1998). The motivation for this study came as a result of the researchers’ findings in their initial literature review. The researchers learned that despite a significantly high rate of abused

patients with chronic mental health issues, routine clinical practice as reflected by medical record reviews consistently produced lower rates of documented information of abuse than those elicited by research studies using direct questioning of patients (Read & Fraser, 1998). These findings are relevant to my proposed study with children. Although this was an adult-focused study, it relates to the importance of the staff-patient relationship, having knowledge of abuse histories, the appropriate formulation of care based on those histories, and adequate documentation in the medical record.

The methodology used for the Read and Fraser study included a comprehensive examination of the first 100 admissions in the calendar year to a New Zealand inpatient psychiatric unit. Thirty-two of the 100 patient medical records included documentation of abuse in one or more categories: childhood sexual (n=17); childhood physical (n=12); adult sexual (n= 8); and adult physical (n=15). These charts were examined for documentation in four areas: 1) recording of previous disclosure or treatment of abuse; 2) action taken by staff during admission, including information about the abuse, abuse counseling, discussion regarding abuse issues or any support in relation to the abuse; 3) discussion about or actual reporting of the abuse to legal authorities; and 4) discussion about or actual referral for abuse counseling to occur after hospitalization. To ensure reliability, 15 of the 100 records were randomly selected and re-examined. No omissions or false inclusions were discovered in any of the four areas (Read & Fraser, 1998).

Of the 100 inpatients, 57 were male, 43 were female. The mean age was 37.6 years. The most frequent diagnoses were schizophrenia (34), major depressive disorder (19), bipolar affective disorder (17), and substance abuse (16). The average length of hospitalization was 26.6 days.

Of the 32 patients who disclosed abuse, 14 (44%) were male and 18 (56%) were female. The mean age was 37.4 years. The most frequent diagnoses were major depressive disorder (9), schizophrenia (8), substance abuse (7), and bipolar affective disorder (6). The average length of hospitalization was 33.8 days (Read & Fraser, 1998). The findings of the study were as follows:

1. Previous disclosure or treatment

- a. The records of 11 out of the 32 patients who disclosed abuse made some reference to previous disclosure or treatment for abuse;
- b. Only three (9%) had documentation that the patient had received abuse counseling or psychotherapy; There was no documentation in any of these cases of the type, duration, or outcome of the treatment;
- c. The documentation in all 11 records were vague at best about the abuse histories;
- d. The records of 21 patients made no reference to any questioning by staff or spontaneous offering of information by the patient regarding prior disclosure or treatment for abuse;

2. Staff action during hospitalization

- a. The records of 29 of the 32 patients who disclosed abuse (91%) included no mention of any staff action in relation to abuse disclosures, in the form of support, counseling, information, or providing opportunity to discuss these issues;

- b. In the three records that documented staff actions, the progress notes referred only to potential plans of care or course of action with no subsequent documentation to support follow through or implementation;
 - c. In all of the 32 records, including the three where the need for staff action was identified, there was no documentation that any staff action was taken to provide the patient with support, counseling, or information during the admission;
- 3. Reporting to legal authorities
 - a. Thirty-one of the 32 records had no mention of reporting or any consideration of reporting the alleged abuse to legal authorities;
 - b. One admission form documented: 'when less paranoid discuss re. report of abuse to police.' No further reference to reporting was found in the record.
- 4. Referrals for post-discharge counseling
 - a. Eight of the 32 records of patients who disclosed abuse included documentation that post-discharge counseling was being considered after hospitalization;
 - b. Three records documented that a referral was made or was in progress at the time of discharge; all three involved re-establishing interrupted therapy;
 - c. For 91% of the patients who disclosed abuse, no arrangements were made during or after hospitalization to address the abuse issues; for 75%, this was not even a consideration (Read & Fraser, 1998).

According to Read and Fraser (1998), the perplexing variable in this study was the process of deciding what staff should document in the medical record. They hypothesized that staff may have offered more support than what was documented in the record when histories of abuse were disclosed. However, they also concluded that staff may have minimized the importance of support and therefore did not warrant documentation, or felt the information was too sensitive to document. Regarding the outcomes of their study, they concluded that there was no reason to assume that the inpatient unit in question was less likely to gather or act on information about abuse than other units in New Zealand or beyond (Read & Fraser, 1998). However, as a result of this study and findings for the psychiatric unit in question, a unit-based policy was developed that actively addressed abuse inquiries and the appropriate follow up action to affirmative patient responses. This included a redesign of the admission form specifically addressing abuse histories.

I view the findings of this study as significant, especially for psychiatric nurses working with children and adolescents on inpatient units. So much rests on the data collected on admission in the development and implementation of therapeutic care. Children do not readily disclose uncomfortable feelings related to abuse or traumatic events. As such, nurses have the responsibility of asking these sensitive but important questions during the comprehensive admission assessment, questions that include any history of abuse, neglect, or traumatic experience and the specifics surrounding those events whenever possible. Familiar inpatient treatment strategies and interventions take on additional meaning when implemented in the context of a child's exposure to past abuse, trauma, or neglect (Lawson, 1998).

Research has found that abuse disclosure in and of itself, at least when noted in adult populations, did not result in harm to the patient, but rather the staff's negative or insensitive responses to that disclosure (Becker-Blease & Freyd, 2006). In Peplau's Theory of Interpersonal Relations, the Working Phase is the second phase where the major work between nurse and patient occurs. The patient learns to make use of the nurse-patient relationship (Fawcett, 2005; Peplau, 1952). During this phase, the patient identifies with those who can offer assistance (relatedness) and the nurse allows the patient exploration of feelings as a therapeutic mechanism (Howk, 2002). "When a nurse permits patients to express what they feel, and still get all of the nursing that is needed, then patients can undergo illness as an experience that reorients feelings and strengthens positive forces in personality" (Peplau, 1952, p. 31). This process provides the patient with needed satisfaction (Howk, 2002). The psychiatric nurse assumes the role of the Resource Person by providing specific information and answers to questions, especially related to health information and interpretation of treatment and plan of care. The nursing assessment assists in determining the appropriate responses for the patient's constructive learning. This includes factual, straightforward responses or therapeutic counseling (Howk, 2002). Although most nurses are skilled in the overt signs of abuse, in the absence of conducting a comprehensive assessment, subtle signs and symptoms of abuse and neglect will go unrecognized (Bishop, Ellison, Ellisor, & Harper, 2007).

2.4.2 Nursing Ideologies and Clinical Care

Research on nursing ideology that drives nursing care in child psychiatric inpatient treatment has been limited. Mental health nurses have not always been aware of the ethical issues and ideological approaches that have guided their clinical practice

(Ellila, Valimaki, Warne, & Sourander, 2007). This has caused concern and has raised questions regarding the position of ethics in child and adolescent nursing, especially when ethically problematic coercive treatment interventions have been frequently used as part of inpatient psychiatric care of minors (Sourander, et al., 2002).

In Europe, children and adolescents with psychiatric disorders have represented an ethically challenging patient population with special needs: they are not considered fully competent to make their own decisions, remain the legal responsibility of their parents or guardians, and are especially vulnerable and potential victims to paternalistic power (Ellila, et al., 2007). Children and adolescents hospitalized in psychiatric units have mixed disorders, multiple diagnoses, and often have severe socioeconomic challenges and poor relationships in families (Ellila, et al., 2007). Nursing care has typically focused on activities of daily living such as eating, sleeping, daily hygiene, and playing; school education; and incorporating parental involvement in the care of their child. Ellila, et al. (2007) believed that despite attempts at providing child- appropriate approaches to care, it could be argued that these approaches were not grounded in any true understanding of the underpinning ideologies. One example from a Finnish study found that mental health nurses had tremendous difficulty identifying and articulating the ideological and theoretical background that guided their clinical practice (Lindstrom, 1995). Those findings raised questions about the values and ethics on which psychiatric nursing practice was based.

Ellila, et al., (2007) conducted a study aimed at describing and exploring the ideological approaches guiding mental health nursing in child and adolescent inpatient units in Finland. Data was collected via a national questionnaire survey, distributed to

managers of child and adolescent psychiatric inpatient units throughout Finland. Of the 69 questionnaires distributed, 61 unit managers responded.

Data were analyzed for both qualitative and quantitative content. The results of the inductive content analysis produced six different ideological approaches used in inpatient nursing: 1) family-centered care; 2) individual care; 3) milieu-centered care; 4) integrated care; 5) educational care; and 6) psychodynamic care. The majority of the units were guided by two or more approaches. Nursing models, theories, and codes of ethics were almost totally ignored in the unit managers' ideological descriptions (Ellila, et al., 2007).

The quantitative analysis was descriptive and based on the results of the qualitative content analysis. The results revealed that psychiatric care was simultaneously driven by two or three ideologies in 71% of the units and by four or five ideologies in 22% of the units. Only two units adhered to only one ideological approach. None of the units followed all six approaches simultaneously. The most common nursing ideology was family-centered care. The most infrequently used ideology was psychodynamic care. Cognitive Behavioral Therapy (CBT) was not listed at all in the managers' descriptions, although CBT is often used and found to be an effective treatment approach in child and adolescent psychiatry (Ellila, et al., 2007). The researchers concluded that the unit managers did not regard cognitive-behavioral therapy as an ideology or perhaps CBT was not part of their units' inpatient practice. Although not mentioned as a conclusion, it is also possible that the managers did not understand what CBT was or felt it was not used due to lack of staff training in this modality. The biological/medical model was also not cited, although much of modern psychiatric treatment includes the use psychotropic

medication. The researchers noted that the unit managers excluded the biological approach as having no connection with nursing ideology (Ellila, et al., 2007). References to various treatment methods, interventions, and activities were described in the questionnaires by the unit managers to illustrate the ideologies specified; however ethical beliefs, principles, and values underpinning the nurses and their clinical practice were seldom mentioned. Unit managers had difficulty recognizing connections between nursing ideology and ethical values of nursing which would clearly influence the ethical choices made by nursing staff. Although nursing is considered a practical discipline, it involves intellectual understanding and critical and theoretical thinking (Reed & Ground, 1992). The results of this study highlighted the absence of nursing models and theories in the unit managers' ideological descriptions, although the concepts of individual, family-centered, milieu-centered, education, psychodynamic, and integrated care were richly reflected. These concepts remain consistent with the tradition of mental health nursing and several nursing theory models of care such as Peplau (Ellila, et al., 2007). Nurse managers should lead their staff by example. The inability of nurse managers to articulate and make the connection between nursing theory, ethical values, and ideological approaches renders theories and models worthless and greatly limits any potential for staff nurses to integrate these in their work with patients (Ellila, et al., 2007).

2.4.3 Program Abuse

Program abuse, although not common, occurs when care and treatment in an established setting falls below normally accepted standards (Gil, 1982; Powers, Mooney, & Nunno, 1990). As a result, staff responses in the context of implementing interventions can have detrimental consequences to hospitalized children when exhibiting aggressive or

explosive behaviors. According to Gil (1982), program abuse includes inappropriate isolation of the child, over-use of medication, disciplinary techniques, and mechanical restraints. In the context of children and adolescents hospitalized on psychiatric units in the United States, Robin (1982) found that these patients were abused as part of the normal course of care and treatment, through the use of depersonalized rules and regulations, locked doors, isolation and seclusion, and the use of psychopharmacology to manage disruptive, out-of-control behaviors. A lack of understanding on the part of staff to the special needs of children may also be a contributing factor (Kendrick & Taylor, 2000).

2.5 Milieu Management

Conceptual models of care that drive the treatment of traumatized children in a hospital setting are not well integrated with treatment models that guide milieu management (Lawson, 1998). More often than not, clinicians responsible for creating and maintaining a therapeutic milieu are rarely prepared to manage both the abuse issues of children as well as their own responses to the abuse histories. Children who cannot control their behaviors as a result of traumatic events may benefit from milieu therapy, a systematic environmental support often found in inpatient child and adolescent psychiatric units (Frank & Gunderson, 1984).

Milieu therapy is characterized as a form of therapy that is highly structured to replicate daily life situations, where the child's social environment is manipulated for the child's benefit (Gunderson, 1978). There are five elements that comprise the milieu therapy model: structure, support, containment, involvement, and validation (Gunderson, 1978). Milieu therapy is designed to be a fluid process where much of what occurs

between staff and patient is in the moment. However, as much as staff attempt to plan interactions in the therapeutic milieu with children, there is a prevalence of staff reacting to presenting behaviors, triggering a mental inventory all the possible interventions (K. R. Delaney, 2006). These interventions may range from the least to most restrictive including medication, time-out, locked seclusion, or four-point restraints. Effective milieu therapy relies on staff who are well-trained, cohesive, and emotionally prepared (Lyon, 1993). However, even well-prepared staff have reported feeling numb or overwhelmed after listening to patients describe traumatic events, causing a secondary trauma for some of the staff. This in turn has caused staff to feel unsafe and question their own perspectives and beliefs about safety in the world (Lyon, 1993).

Children who exhibit aggressive behaviors toward staff, either verbally or physically, influence nursing staff distress, their productivity, their desire to remain in nursing, and their potential for making errors. In one study, loss of time from work, financial constraint, and psychological trauma were experienced by nurses who sustained injuries from physical assault (Love & Morrison, 2003). In another study, nurses reported distress related to their inability to provide the appropriate care to meet their patients' needs (Farrell, Bobrowski, & Bobrowski, 2006). These reactions could potentially trigger inappropriate staff responses and use of interventions that do not necessarily address the underlying precipitating factors of the child's behavior, thus losing their effectiveness (K.R. Delaney, 1999).

2.5.1 Time-Out

On most inpatient child and adolescent units, the concept of time-out is used as a frequent and often automatic intervention in response to a child's inappropriate behavior.

(K.R. Delaney, 1999). Although inpatient research has demonstrated that timeouts are effective in decreasing the rate of a child's negative behaviors (Paterson & Duxbury, 2007; Steele, 1993) by withdrawing the child from an activity, social isolation (Goren & Curtis, 1996) or by temporarily making the child's immediate environment unavailable, thus removing any positive reinforcement for a particular negative behavior (Selekman & Snyder, 1995b), it has also been demonstrated that time-outs lose their effectiveness when implemented without consideration of the child's needs or the underlying factors causing the inappropriate behavior (K.R. Delaney, 1999).

Theoretically, a time-out is defined as restricting the child's opportunity to earn rewards due to negative behaviors; however this approach often leads to the removal of the child from the reinforcing environment to one more undesirable, thus turning the intervention into a strong punishment (K.R. Delaney, 1999). Time-outs may include movement to a chair, bedroom, hallway, or at times, a seclusion room. When staff lose sight of the intervention's intent and the imposed isolation becomes aversive due to its length or location, the nature of the intervention is completely altered and is no longer therapeutic (Fawcett, 2005).

A time-out that escalates into strong punishment is especially problematic in inpatient child psychiatry as it has been an accepted practice to alter the location or increase the length which intensifies the aversion (K.R. Delaney, 1999). The use of time-out as part of a behavioral continuum of interventions based on the severity of a child's inappropriate behaviors, such as a chair time-out for mild noncompliance versus seclusion for physical aggression (Becker-Blease & Freyd, 2006) may be intentional and incorporated into the child's treatment plan or take on a life of its own through ongoing

staff interactions with the child, thus escalating the time-out to a punishment (K.R. Delaney, 1999)

The force by which the time-out is implemented by staff may cause the child's behavior to escalate or intensify. If in tenuous control, the child may easily explode by one harsh or demanding staff direction such as taking a time-out for inappropriate behaviors. What was originally identified as a time-out to a chair may now escalate to seclusion based on the child's explosive response to the direction. Other staff responses that fuel tension for the child rather than relieve it are as follows: 1) when staff stand in front of the child and announce the countdown, the amount of time the child has to reach the identified location; or 2) if the child is noncompliant with staff's direction, staff increase the length of time for the time-out or warn the child that if unable to take the time-out now, the time-out will occur in the seclusion room (K.R. Delaney, 1999).

When time-outs become the automatic staff response to all inappropriate behaviors, the interventions are no longer therapeutic. Overuse of time-outs can be negatively reinforcing for staff as it provides immediate relief from a child's negative behaviors. This sense of immediate relief from the unwanted situation reinforces its benefits to staff and encourages staff to continue using this intervention freely (K.R. Delaney, 1999; Walker, Greenwood, & Terry, 1994). Less experienced staff feel more confident using time-outs due to its accessibility and immediate success rate. It becomes the all-purpose intervention in containing inappropriate behaviors; however it prevents newer staff from learning to recognize the nuances of the milieu situation, the underlying causes of the child's negative behaviors, or learning more appropriate interventions that readily address the child's needs (K.R. Delaney, 1999). When a child no longer responds

to staff direction, feelings of anxiety or the reliving of a past trauma may be occurring (Van der Kolk & Fisler, 1993). Staff that persist in one dimensional approaches to care and fail to recognize the psychological or neurobiological factors of a child's dysregulation, are no longer matching the appropriate intervention to the presenting behavior (Kendall & Braswell, 1993).

Similar to the findings from the Finnish study (Ellila, et al., 2007) that concluded that nursing approaches to care were not grounded in any true understanding of the underpinning ideologies, other researchers have found that staff are often unaware of the behavioral principles underlying the use of time-outs (K. R. Delaney, 1992). According to Rodgers, interventions based on staff assumptions of what behavioral programs are designed to accomplish occur when behavioral principles are vague or nonexistent. As a consequence, inpatient nurses working on child and adolescent units choose time-outs as an intervention based on deep-rooted belief systems, not principles, thus running the risk of neglecting the nuances of the child's behavior, the underlying causes, and the need for a functional assessment of that behavior (K. R. Delaney, 1992; Selekman & Snyder, 1995a). When time-outs are automatically implemented without thoughtful consideration, the message about why the child is receiving the time-out in the first place is grossly diminished (K.R. Delaney, 1999).

A child's experience of being heard and understood is a broad goal of inpatient psychiatric nurses (K. R. Delaney, 1992). At the beginning of a time-out, staff in general name the infraction or inappropriate behavior to the child then proceed with the consequence of implementing the time-out. The debriefing process that occurs at the end of the time-out gives staff the opportunity to explain to the child why the time –out was

given. The assumption that debriefing facilitates a child's understanding of his/her behavior is flawed. Although debriefing may help the child explore the cause and effect (inappropriate behavior causes a time-out), it does not facilitate learning about emotions or how cognitive deficits or excessive stimulation relates to inappropriate behaviors (K.R. Delaney, 1999). Time-outs are only useful when they are implemented with clear intent and understanding of how it is addressing a particular behavior and effectively communicated to the child. Otherwise, staff run the risk of overusing and potentially misusing time-outs (K.R. Delaney, 1999).

2.5.2 Locked Seclusion and Restraints

An extensive literature search was conducted and not surprisingly, little research was found related to the use of restraints and locked seclusion with children and adolescents, especially after the 1990s. Most of the research found related to the psychiatric and intensive care of adult populations and care of the elderly.

In the research specific to children and adolescents, the use of restraints has been correlated to staff shortages, convenience, uneducated staff, past practice (Kennedy & Mohr, 2001); limit-setting, containment (Bath, 1994); prevention of self-injurious or destructive behaviors to self or others (Hopton, 1995); safety (Petti, Mohr, Somers, & Sims, 2001); or as punishment in an effort to transform or subdue unacceptable into acceptable behaviors (National Alliance for the Mentally Ill, 1999). However in recent years, there has been the emergence of literature on the perspectives of healthcare workers and restraint use that reveals most providers now perceive restraints as a method of punishment with potentially negative psychological consequences for both the patient

and staff involved rather than a therapeutic intervention or valid part of treatment (Paterson & Duxbury, 2007).

Two studies were found that explored staff attitudes toward seclusion and restraint use. The first study was conducted in four different hospitals in two Midwestern states. (Steele, 1993). Employees working in the inpatient psychiatric settings of these hospitals were surveyed regarding their attitudes and opinions regarding the use of confinement (locked seclusion). Subjects were asked about the factors that influenced their decision to initiate more restrictive interventions, what their role was during the child's seclusion event, what factors influenced their decision to remove the child from seclusion, and how they felt about the process. A combination of structured and open-ended questions, and items for ranking order were used to obtain the data (Steele, 1993). The following are the outcomes from the study:

Hospital A was a private child facility for ages 5-18. Staff included five males, four females with an age range of 30-37 years. Six were RNs and three were counselors. Of all the potential behaviors, obvious loss of control and aggression toward self or others were ranked by staff as the most important reason for confinement. Staff surveyed stated they would not hesitate to place a child in seclusion who requested to be in seclusion or one who was disruptive to the therapeutic milieu. They valued teamwork but felt concerned and uneasy when working with inexperienced staff. Comments from the subjects surveyed included feelings of confidence in their ability to respond without fear or hesitation, yet also felt they needed opportunity to process feelings of anxiety after the event. Staff believed restraint should be used as a last resort, felt that most staff use good judgment when deciding to terminate seclusion, and felt more attention and focus was

needed on the perceptions and feelings of the children confined and on the feelings of staff that implemented confinement. Staff consistently qualified or elaborated on most of the questions asked on the survey and felt many of the accepted reasons for seclusion did not necessarily pertain to children. Most indicated that their main clinical strengths were in knowing the child and having trusting and cohesive relationships with co-workers (Steele, 1993). One staff reported “I am sensitive about seclusion and restraint being perceived as consequence or punishment, but really see it as a protection measure.” (p. 25).

Hospital B was a community mental health center that served a vast catchment area for patients aged 18 years to elderly. Subjects included five females, all registered nurses. Age range of staff was 30-37 years. The primary cause for implementing seclusion related to destructive behaviors. Time-outs were utilized as a first-line intervention and restraints were viewed as a last resort. As far as their role during seclusion, patients were observed closely through a window. Staff did not go into the seclusion room. Staff at this hospital also disliked the concept of seclusion as punishment but recognized the need to protect them when aggressive. Staff commented as to whether the use of restraint and/or seclusion exacerbated a patient’s aggressive behavior, fueled their hostility, or actually calmed them down. Staff felt more audits were needed to see what interventions were tried prior to confinement, recognized that low staff periods such as meal times might cause more acting out behaviors, and wished to use more combination treatment interventions other than confinement especially with the younger patients as staff were concerned about perception and whether the younger patients felt helped or harmed by the experience (Steele, 1993).

Hospital C was a state facility that served all ages and included the developmentally disabled. Staff included two males and five females with an age range of 30-45 years. Four were RNs, one was an LPN, and two were techs. This particular facility no longer used seclusion and used restraints as a last resort and as evidence of failure to initiate more appropriate interventions earlier. Staff heavily valued the use of verbal intervention and emphasized patient participation in the decision-making process. They felt time was better spent with the patients and less time devoted to documentation. Most stated that alternate approaches were needed for children such as closer interactions and providing more timely interventions.

Hospital D was a children's state hospital. Staff included two RNs, two LPNs, two techs, and one counselor. Time-outs were used more frequently than other more restrictive interventions and confinement was used only when actual aggression occurred. They were not comfortable with the high turnover rate of staff and the accompanying reliance on inexperienced staff. There was a high ratio of ancillary staff working on this unit. Many were in a younger age group with two years or less of work experience. Most staff preferred closer interactions with children and unlocked time out to locked seclusion or restraint. Some believed 1:1 observation and medication were more effective than locked seclusion (Steele, 1993).

Overall, 60% of staff surveyed from all four hospitals would not seclude a patient due to hyperactivity or fear expressed by staff or other patients; however 80% stated they would seclude when verbal interventions failed. Verbal interventions were viewed as helpful, not harmful and did not make the situation worse. The majority of staff queried felt a duty to control violence (70%) or prevent violence (60%). Although there was a

reluctance to confine children for disruptive (70%) or unacceptable behaviors (60%), the use of seclusion or restraints was surprisingly seen as therapeutic when deemed absolutely necessary (60%) and 70% felt comfortable with the amount of seclusion and restraint used on their units (Steele, 1993).

The second study by Goren and Curtis (1996) examined staff beliefs about the efficacy of and rationale for the use of locked seclusion and restraints with children and adolescents. Thirteen facilities participated in the study and 320 subjects completed the survey – 216 from private child psychiatric hospitals, 111 from public child psychiatric hospitals. Respondents were nurses, therapists, teachers, paraprofessionals, and other allied professionals such as music, art and occupational therapists. Some staff reported positions not classified by profession such as program manager, and some did not report their position. In addition to demographic data about each respondent, two scales were used for the survey. One scale tested respondents' beliefs about patients' reactions to seclusion and restraint and the other tested beliefs about the appropriate use of these interventions (Goren & Curtis, 1996).

The results of the study showed there was a low to moderate level of confidence among all staff groups regarding the efficacy of restraint and seclusion use and patients' positive responses to these interventions. Of the two groups, staff from the private sector reported more positive beliefs about patients' responses to restraint and seclusion than staff from the public sector; however the reason for this was unclear. Seventy percent of all respondents agreed that seclusion and/or restraint were appropriate interventions in response to physical aggression. More than 90% agreed that these interventions were inappropriate when children were noncompliant with staff direction, hyperactive, or

psychotic. Self-injury and threats of violence were viewed as more controversial – 50% approved using these interventions with self-injurious behaviors, and 30% approved these interventions for threats of violence (Goren & Curtis, 1996). Overall, the researchers wondered why staff would repeatedly engage in dangerous or upsetting interventions that they collectively felt were unlikely to produce desired changes in a child's behavior? They hypothesized that the prevalent use of restraint and seclusion in response to maladaptive behaviors reflected the persistence of unexamined fixed practices and the unacknowledged avoidant/coercive staff reactions to patients labeled as deviant. They also concluded that the differences in restraint and seclusion use between the public and private sectors might be idiosyncratic to each institution and that these differences suggested the need for evidence-based research and standardization for their use (Goren & Curtis, 1996).

The validity of restraint use as a therapeutic intervention rests on the assumption that it works. With some limited exceptions, the evidence base found in literature reviews continues to be of very poor quality and cannot support this assumption (Paterson & Duxbury, 2007). The reviews conducted by the National Institute of Clinical Excellence and the American Medical Association confirmed that evidence-based recommendations for the use of restraints cannot be made due to insufficient research (Paterson & Duxbury, 2007). Other researchers have determined that little is known regarding the efficacy of locked seclusion and restraints and there remains a lack of substantive research on the process leading to the use of these restrictive interventions (W. Mohr, Mahon, & Noone, 1998; Persi & Pasquali, 1999; Petti, Sims, Somers, & Haugh, 2001). The use of physical restraints as a therapeutic intervention remains controversial and questionably unethical

(Bath, 1994; Brenner, 2007; Hopton, 1995; Paterson & Duxbury, 2007; K. Regan, 2010; Robin, 1982; Smith & Bowman, 2009) and “no research evidence has demonstrated restraints to be therapeutically effective” (W. K. Mohr & Anderson, 2001).

One study by Delaney and Fogg (2005) explored the characteristics of children and the rationale for implementing physical restraints in child psychiatry. As part of their literature search, they reviewed past studies that involved both locked seclusion or restraints and the characteristics of children that led to implementation of these more restrictive interventions. Table 4 summarizes those studies and outcomes from research conducted from 1989-1995.

Table 4

Summary of Studies of Seclusion and Restraint, 1989–1995 (K. Delaney & Fogg, 2005)

Study	Type of Unit	Length of Stay	Number of Youths	Time Frame	Incidence of Seclusion/Restraint	Characteristics Of Youths Secluded or Restrained	Patterns of Seclusion/Restraint Use
Swett et al., 1989	Child unit in state hospital	Mean of 173 days	176	All admissions for one year	46% restrained; 57% secluded	Not examined	Imminent danger of harming self or others
Garrison et al., 1990	Child unit in general hospital	Mean of 41 days	99	All admissions for one calendar year	50% were restrained or secluded in some manner	Younger, male, or tested higher for aggression	Assault, self-injury, property damage. Rates of use were higher during shift change or periods with decreased programs or activities
Millstein et al., 1990	Child unit in general hospital	Mean of 75 days	102	All admissions for 30 months	16% secluded at least once; 44% secluded three or more times	Previous suicide attempts; previous admission; abuse and aggression, decreased coping skills/ neurocognitive deficits	Increased seclusion use when milieu was busy or stimulating; during day shift; or during therapeutically demanding times
Atkins et al., 1992	Eight separate child units in state hospital	Mean of 144 days	408	All admissions for one calendar year	60% secluded at least once; 15% secluded more than twice per month, accounting for 75% of all seclusions	Male (secluded two or more times); nonwhite; previous admissions; disruptive behavioral disorder	Mean duration of seclusion 5 hours
Goren et al., 1993	Child inpatient unit in medical center	Mean of six months	175	All youths restrained or secluded during the three year study period	28% had one episode of restraint or seclusion; 25% were secluded five or more times; 32% were restrained more than once	Male; younger; diagnosed with a behavioral disorder	Aggression toward others; noncompliance; self-harm
Earle et al., 1995	Three child state hospitals	60% had length of stay greater than six months	257	One time inspection of children residing in units	33% secluded at least once; 7% secluded two or more times, accounting for 50% of all seclusions	Older, longer lengths of stay; had organic or developmental disabilities	Agitation; threatening behavior; assaulting others. Rates of seclusion were higher on Mondays and in the morning

In the study conducted by Delaney and Fogg (2005), the medical records of 100 children admitted to four psychiatric units within a free-standing psychiatric hospital between December 1998 and January 2000 were reviewed to examine the characteristics of children and adolescents who were restrained during their short-term hospitalization and to determine whether the characteristics of the children or the setting itself, such as time of day, day of week, place, or unit programming influenced restraint use (K. Delaney & Fogg, 2005).

Data collection methods for this study included both a chart audit of the 100 identified children and an aggression scale that rated behaviors of those children six months prior to their hospitalization. In addition to standard diagnostic and demographic data, histories of maltreatment, acts of aggression six months before admission, the restraint incident, the behaviors exhibited by the child that prompted restraint, and the interventions attempted prior to restraint use were collected (K. Delaney & Fogg, 2005).

The results of their study included the following:

- Out of the 100 youths, 31 youths were not restrained;
- 57 youths were restrained once or twice;
- 12 youths were restrained three or more times;
- Increased restraint use occurred with males, youths with multiple admissions during the study period, increased length of stay, those that carried a diagnosis of psychosis, or had previous psychiatric hospitalizations;
- Youths restrained were more likely in special education, living in foster care or in the custody of the Department of Children and Family Services,

or had verbalized suicidal ideations or had made previous suicide attempts;

- Restraint use was precipitated by aggressive or assaultive behaviors, threats, or agitation.
- Most occurrences were initiated at the beginning of hospitalization or during the mid-afternoon hours;
- No single setting variable was found to be significant for restraint use;

According to Mohr and Anderson (2001), researchers and clinicians have not paid enough attention to the impact of the restraint process and its effects on children. The experience of applying restraints or locking a child in seclusion has been found to be both highly volatile and emotional for the child as well as staff (W. K. Mohr & Anderson, 2001). Children often report feeling fear, anger, and confusion during this process (W. Mohr, et al., 1998). These cognitive-emotional responses tend to be heightened in children with histories of trauma and subsequent placement within the foster care system. According to Persi and Sisson (2008), it is more likely that foster care children admitted to hospitals will exhibit more salient externalizing behavior problems and disorders such as aggression resulting in management and exposure to more intrusive safety interventions such as restraints. As a result of being restrained, foster care children have reported feeling fearful and often relive emotions similar to those experienced during a past traumatic event (Persi & Sisson, 2008). Physiological responses ignited the fight-or-flight response causing an elevation of blood pressure and heart rate (W. K. Mohr & Anderson, 2001). According to Perry (1997) children abused, neglected, or traumatized have a greater sensitivity to cortisol imbalances in the brain with repeated stimulation.

Excessive cortisol levels lead to neurotoxicity, causing damage in the hippocampus. This leads to increased anxiety, memory loss, and inability to control emotional outbursts (Perry & Pollard, 1998; Perry, Pollard, Blakely, Baker, & Vigilante, 1995).

In studies conducted in the 1980's, the use of physical restraints was considered preferable to seclusion when staff had an option to choose (Irwin, 1987; Miller, 1986; Robin, 1982). One rationale that supported the use of physical restraints over seclusion was the possibility that the isolation or rejection inherent to the act of seclusion would evoke or reinforce feelings of deep anxiety already experienced by disturbed children. According to Robin (1982), "many abused and disturbed children harbor deep anxiety about being abandoned, unwanted, and unloved, which tends to be reinforced by their time-out room experience" (p.85). Seclusion and imposed isolation become aversive disciplinary techniques, which for the child initially produces feelings of terror and rage, progressing to feelings of helplessness, then eventual resignation and compliance (Robin, 1982).

Maria Brenner, a nurse researcher from Ireland conducted a literature review on the use of child restraints and its impact on children (Brenner, 2007). Her research concluded that restraint use was an extraordinarily stressful event; however none of the literature she reviewed explored the outcomes of restraints on children. Brenner's findings or lack thereof seem to support Mohr and Anderson's attestation that attention to the aftermath and actual short and long term consequences of restraint use in children on the part of researchers and practitioners is insufficient. With little data available, Brenner concluded some researchers could only hypothesize long-term effects of restraints on hospitalized children such as psychological deficits; future fears and their negative

impact on trusting relationships; links between increased stress and the disease process (Selekman & Snyder, 1996); cumulative retraumatization; post-traumatic stress disorder; physical discomfort; asphyxia; and untimely death (Kennedy & Mohr, 2001; Masters, 1998).

One of the few researchers who examined the responses of locked seclusion specifically with children was Miller (1986). Forty children, ages 5 to 13 years, participated in his study and were asked to draw and comment about their experiences with time-out and/or seclusion. Pictures that portrayed people did not convey a sense of gaining self-control while in seclusion but rather conveyed punishment, depicting a child crying and pleading for help. The descriptions of the actual experiences with seclusion included feelings of abandonment and /or feeling very afraid (Miller, 1986).

In 2002, the American Academy of Child and Adolescent Psychiatry issued practice parameters for the prevention and management of aggressive behaviors in children and adolescents in psychiatric settings, specifically regarding the indications for and use of seclusion and restraints. In their comprehensive executive summary, practice parameters described minimal standards for clinical practice, with an expected application rate of 95% of the time. These recommendations were based on substantial empirical data derived from double-blind, well-controlled studies and/or overwhelming clinical consensus (American Academy of Child and Adolescent Psychiatry, 2002).

Categories addressed in the executive summary included:

- Prevention of Aggressive Behavior: Intake and assessment; treatment planning; and staff training;

- Crisis Management: De-escalation strategies; indications for the use of seclusion or restraint; ordering and monitoring seclusion and restraint;
- Processing Strategies: Administrative oversight; documentation;

Three levels of crisis management were defined, ranging from the least to the most restrictive interventions. Level 1 interventions were categorized as Nonrestrictive, designed to preserve patient safety while promoting behavioral self-control and self-determination. Examples cited included verbal prompts and de-escalation, role-modeling, behavioral contracts, rewards and incentives, and time-outs less than 30 minutes. Level 2 interventions were classified as Restrictive, as safety for the patient, safety for others, as well as safety for property was of greater concern. Although continued promotion of behavioral self-regulation was recommended as in level 1, the focus of level 2 was the use of interventions that supported adaptive behaviors while eliminating any reinforcement of the child's maladaptive conduct. Examples of level 2 interventions included extinction or ignoring maladaptive behaviors, room restriction, or time outs exceeding 30 minutes. Level 3 interventions were identified as Most Restrictive, generating the greatest external control and limitation of autonomy of a child's behavior. These measures, although potentially aversive to the child and perhaps staff, were to be implemented out of necessity; when the risk of harm to the patient or others, or significant damage to property outweighed the promotion of the patient's autonomy, and all less restrictive interventions with the aggressive patient had failed. Level 3 interventions included seclusion, physical restraint of a child that involved one or more staff in bodily contact with a child; mechanical restraint of an adolescent using leather or cloth restraints or a calming blanket; and chemical restraints such as medication that

would control behavior or limit freedom of movement that was not otherwise used in the standard treatment for the child's psychiatric condition (American Academy of Child and Adolescent Psychiatry, 2002). It should be emphasized that the Academy developed the practice parameters for restraint and seclusion as strategies for patient behavioral management and assistance to clinicians in psychiatric decision-making and not to define standards of care. To their point, the ultimate judgment regarding the clinical care of a particular patient rests with the clinicians responsible for that care, evaluating all the circumstances, risks and benefits, diagnostic and treatment options, and available resources in order to achieve the desired result.

As the Academy acknowledges that periodic review and revision of these practice parameters must occur due to the inevitable changes in scientific information and technology, so too must clinicians review and revise their own practice strategies when treating hospitalized children with psychiatric and behavioral disorders. The challenge for staff will be to abandon the traditional, more restrictive and often punitive interventions, venture outside their comfort zones, and be open and receptive to evidence-based interventions that promote wellness, safety, and trust and not to exacerbate symptoms, instill fear, or replicate past traumatic experiences for the child. This was our inpatient staffs' challenge in 2006 and the impetus for our child unit's performance improvement project that incorporated the Collaborative Problem-Solving Approach.

2.5.3 The Collaborative Problem-Solving Approach

The Collaborative Problem-Solving (CPS) approach was developed specifically with the explosive child in mind. Tantrums, defiance, severe resistance, verbal and physical aggression are just a few of the challenges explosive children present. Unlike

other behavioral management systems, CPS offers a reconceptualization of explosive behaviors and their underlying causes. The premise of the Collaborative Problem-Solving approach is that “children do well if they can” not “children do well if they want to” (Greene, 2005). The CPS model emphasizes development and cognition and how these deficits may contribute to a child’s noncompliance, low frustration, and explosiveness. As such, explosive behaviors are seen as learning deficits, not willful deliberate acts of defiance (Greene & Ablon, 2006).

The CPS model categorizes five clusters or “pathways” that identify the lagging developmental skills or cognitive deficits that may cause a child to act aggressively. They are as follows:

1. Executive Skills – includes working memory, organization and planning, and shifting cognitive set (the flexibility and efficiency to shift one’s expectation of rules from one situation to another);
2. Language-Processing Skills – skills central to adaptability, flexibility, and frustration tolerance;
3. Emotion Regulation Skills – ability to regulate an acute emotional response to a specific precipitant; a child’s overall or pervasive affective state;
4. Cognitive Flexibility Skills – ability to demonstrate tolerance for less predictable, less rigid routines without significant frustration.
5. Social Skills – adaptive social interactions, problem-solving, increased frustration tolerance, appreciating social nuances, attending to social cues, and appropriate social behaviors (Greene & Ablon, 2006).

The CPS model presents three plans as examples of what interventions work and ones that do not. For the purpose of relevance, Plan B – the Collaborative Problem-Solving approach, is the plan utilized for this study and will be explored more in depth.

However, a brief overview of each plan will be presented in the order delineated by the researchers to illustrate the differences of each and their respective effectiveness.

PLAN A – The tendency is for adults to insist more intensively when a child does not meet expectations. When this approach is used with an explosive child, the probability of an explosive episode increases. As a result of the child's poor response, incentives or threats of punishment are pursued, further intensifying the incompatibility of the adult's intense insistence for compliance and expectation and the characteristics and cognitive limitations of the child (Greene & Ablon, 2006).

PLAN C – This plan also attempts to remove or reduce a specific expectation and is a highly effective approach in decreasing a child's level of frustration. It reduced the probability of an explosive episode by either saying nothing, acknowledging that the noncompliant behavior is okay, or by dropping the demand altogether. The initial expectation or request by the adult is not achieved (Greene & Ablon, 2006).

PLAN B – Collaborative Problem-Solving. A process that engages the child in working toward a mutually satisfactory resolution between the adult and child (Greene & Ablon, 2006). There are three basic goals of intervention defined by the CPS model:

1. To dramatically reduce the intensity, duration, and frequency of an explosive episode.
2. To assist adults in pursuing expectations.

3. To teach the child cognitive skills that are lacking

Goals Achieved by Each Plan (Greene & Ablon, 2006)

	<u>Pursue Expectation</u>	<u>Reduce Outbursts</u>	<u>Teach Skills</u>
Plan A	X		
Plan C		X	
Plan B	X	X	X

According to the authors, participants of Plan B must have the capacity to identify and articulate the problem to be solved, any associated concerns, the possible solutions and the likely outcomes, whether these outcomes are feasible, and whether the outcomes will be mutually satisfying. Teaching the child additional skills associated with each pathway, as illustrated earlier, are essential in managing frustration. The CPS model can be effectively implemented in more structured environments, such as schools, residential settings, juvenile detention facilities, and inpatient psychiatric units, and not just at home within the context of a parent/child relationship. Greene and Ablon contend that the implementation of the CPS model in these settings can elevate standards of care and ultimately assist staff in achieving the primary goal of intervention: to reduce the need for continued placement or readmission in a given facility by ensuring a child has learned the necessary cognitive skills to function (Greene & Ablon, 2006).

An extensive literature search for studies utilizing the Collaborative Problem-Solving approach was conducted. Four studies were found.

Study #1: The Stanley Foundation funded an initial study of the CPS model that involved 50 children, all clinically referred to outpatient care, with a diagnosis of Oppositional Defiant Disorder (ODD) and sub-threshold symptoms of severe major

depression or bipolar disorder. The children ranged in age from 4 years to 13 years. The 50 children from outpatient care were randomly assigned to one of two treatment interventions: CPS or Parent Training (PT). For parents receiving PT, Barkley's program for defiant youth was used and all participants received 10 weeks of treatment consisting of 9 consecutive weeks and a one-month follow-up. Teaching modules for the parents were highly structured and included topics such as understanding their child's misbehavior; motivating their child to increase compliance; decreasing disruptive behavior; establishing proper disciplinary systems without corporal punishment; and improving school behavior with a home-based reward system (Knutson, 1995). The participants of the CPS model received a variable length of treatment ranging from 6 to 16 weeks, although the average length of treatment was 10 weeks. This variability was based on the clinicians' assessment of the needs of each child and family (Greene, Ablon, & Goring, 2003).

The treatment responses at the beginning and end of treatment and at a 4-month follow-up were assessed using a variety of instruments including: parent ratings of their child's oppositional behavior; parent completion of the Parent Stress Index; therapist-completed clinical global improvement ratings (CGI); and CGI ratings by telephone interviewers unaware of the two treatment modalities implemented or of the treatment each family received. Although the results of the study showed significant improvement in children at the end of treatment and at the 4-month follow-up regardless of the treatment received, CPS produced significantly superior outcomes compared to PT on therapists' CGI ratings and parent ratings of oppositional behaviors at the conclusion of treatment, and parent telephone ratings at the 4-month follow-up. Parent ratings of

oppositional behavior at the end of treatment indicated that CPS produced clinically significant improvement –from baseline of 30% or greater – in 52% of the children treated with CPS as compared with 31% of children whose parents received PT (Greene, et al., 2003). Parent CGI ratings at the 4-month follow-up indicated that 74% of children in the CPS model had exhibited an “excellent response” to treatment, defined as a rating of “very much improved” or “much improved” as compared to 41% of those who received PT (Greene, et al., 2003).

Study #2: The Open Arms Program of the Cambridge Hospital Child Assessment Unit (CAU) is a Harvard Medical School teaching site for training child psychiatrists and psychologists. It is a 13-bed psychiatric unit that cares for children, ages 2 through 12 years. Diagnoses treated include post-traumatic stress disorder and other anxiety disorders, attention deficit hyperactivity disorder, mood disorders, psychotic disorders, pervasive developmental disorders, and learning disorders. Almost all of the children admitted are labeled “out of control.” Length of stay is variable, from 2 weeks to several months, depending on availability of placement if long term treatment is required post-discharge (K. Regan, et al., 2006)

In 2001, the CAU created the Open Arms Program to provide a more humane psychiatric care to children by utilizing less restrictive interventions in the management of aggressive behavior (The Open Arms Program of the Cambridge Hospital, 2003). The adoption of the CPS model served as the foundation for changes in unit programming, policy and procedure, and overall reinvention of the unit’s therapeutic milieu, staff culture, and core values (The Open Arms Program of the Cambridge Hospital, 2003).

Key leadership in the CAU's transformation included child and adolescent psychiatrist Bruce Hassuk MD, medical director, and Kathy Regan RN, nurse manager, in collaboration with Ross Greene, PhD, a child psychologist at Massachusetts General Hospital and author of the CPS model. The implementation of the CPS model required an honest examination of the unit's culture and staff letting go of traditional values and preconceived solutions and outcomes. Terms such as acting out, splitting staff, and manipulation were replaced by language that identified cognitive deficits rather than intention. New values defined a nurturing environment that supported teaching and learning, and offering choices to solving problems rather than enforcing rules (K. Regan, et al., 2006; The Open Arms Program of the Cambridge Hospital, 2003).

Four main goals were developed for the program: to provide a thorough assessment and comprehensive formulation that identified individual deficits without resorting to punitive or coercive interventions; to provide a nurturing environment that eliminated seclusion and restraints in the management of aggressive behavior; to increase staff satisfaction by decreasing staff injury and to build staff cohesion through common core values and procedures; and to develop parental partnerships in the care of their children (The Open Arms Program of the Cambridge Hospital, 2003).

Dr. Greene educated staff to the CPS model and principles of care through a series of training sessions and evaluated and redirected unit policies pertaining to children and their families. The variables studied to determine success in improved patient experiences and outcomes were the use of seclusion and restraint, staff injuries, and staff and patient satisfaction. Through intensive training, staff responses to aggressive and explosive behaviors were transformed as they learned to become more astute observers of

behavior, role models and collaborators with the children, family members, and co-workers, and to identify precipitating factors to aggressive behaviors (K. Regan, et al., 2006; The Open Arms Program of the Cambridge Hospital, 2003).

The focus of treatment planning shifted to include an in-depth discussion of each child on a daily basis with the input from all clinical staff regarding the child's behavior. Daily goals for each child were developed. Children were reassessed frequently and goals and interventions adjusted to accommodate a child's change in tolerance to groups, stimulation, and therapeutic milieu.

Significant policy changes were made to align more closely with the unit's new core values and therefore more trauma-sensitive. Open visiting hours allowed family and caretakers to visit without restriction. Families were encouraged to participate in their child's daily self-care activities, to have meals with them, and assist them in getting ready for bed and settle in the evening (The Open Arms Program of the Cambridge Hospital, 2003). The use of "positive physical touch" replaced their former "no physical contact" protocol. This approach assisted children with trauma histories to learn in a safe environment that positive appropriate physical contact such as hugs, affectionate approaches, joking, and enjoyment with caring adults was possible (K. Regan, et al., 2006). Children were allowed to sleep in the hall in view of staff if fearful or having difficulty sleeping. Children could stay up until tired if afraid to enter their bedroom or watch television in their room until sleepy. Medical procedures, especially those requiring needles were modified to increase comfort, reduce fear and discomfort. Anesthetic cream was applied topically to arm venipuncture sites, medication was offered to decrease physical pain, and procedures were postponed if the child refused or

was still afraid (K. Regan, et al., 2006). When explosive episodes occurred, staff were assigned to remove other children from the area for safety while other staff remained to assist the child in regaining control with restraints. Brief physical holds were utilized as a last resort. Preferable interventions included distraction techniques, offering a walk or a known desired activity, a telephone call to home, or listening to music (K. Regan, et al., 2006). The CAU received permission from the Massachusetts Department of Mental Health (DMH) to remove the doors from the seclusion rooms. This groundbreaking approach, the first unit to do so in Massachusetts, transformed what was formerly frightening and unfriendly rooms into fun places for children to play. Speakers were installed in bedrooms, quiet rooms, hallways and other community areas to incorporate music and other sounds as a strategy for managing aggressive behavior (The Open Arms Program of the Cambridge Hospital, 2003). Medication management was also reevaluated within the context of how and when children received medication when aggressive. A major cultural shift occurred from medication use as a last resort to early identification and use of short-term medication management with children identified as “not yet workable.” When aggressive and/or assaultive behaviors were evident, the child received a thorough assessment and an individual short-term formulation until behaviors were decreased.

The success of the CAU and the integration of the CPS model has been an integral part of the Department of Mental Health initiative to significantly reduce the use of more restrictive interventions in child and adolescent acute care and continuing care programs. (The Open Arms Program of the Cambridge Hospital, 2003). The preliminary outcomes that resulted from these programmatic and treatment changes were the absence

of mechanical restraints, locked-door seclusions, physical holds exceeding five minutes, and serious staff injuries requiring treatment. Prior to the Open Arms Program, the Child Assessment Unit's use of restraints and locked seclusion was twice the state average for child units – one to two episodes per day. As of February 2006, mechanical restraints had not been used since November 2001 and no locked seclusions or chemical restraints since February 2002 (K. Regan, et al., 2006).

Serious staff injuries were significantly reduced, from six during 2000 and 2001 to zero in 2002 and 2003. Minor staff injuries and brief assaults such as hits, kicks, or punches requiring no medical care also decreased: 99 minor injuries in both 2000 and 2001; 77 injuries in 2002; and 38 injuries in 2003 (K. Regan, et al., 2006). Prior to incorporating the CPS model, similar incidents would result in the use of seclusion and restraints. It was during the process of implementation that the more serious injuries would occur (K. Regan, et al., 2006). As a result of the program's successful utilization of the CPS approach and the elimination of locked-door seclusion, the need for the CAU to maintain licensure granted by the state's Department of Mental Health (DMH) to implement these restrictive interventions was no longer necessary. In 2002, DMH gave the CAU approval to return its license to them. In addition, a waiver exempting the CAU from locked-door seclusion use was granted by the Department of Public Health. By the end of 2003, brief physical holds under five minutes were reduced from over 100 per month to 10 or less per month (K. Regan, et al., 2006).

Prior to the CPS model, staff felt like "rule-enforcers, unhappy, felt undervalued and unappreciated (K. Regan, et al., 2006). Staff now reported increased job satisfaction that resulted from talking and playing more with the children and having a common

vision instead of ongoing limit setting (The Open Arms Program of the Cambridge Hospital, 2003). Five staff pursued further education, two enrolled in nursing school, and one received her diploma as an elementary school teacher. Area nursing schools have increased their clinical rotations through the CAU due to positive experiences and two additional schools started sending students to the unit (K. Regan, et al., 2006).

Staff turnover stabilized over time. According to Regan (2006), 18 months prior to the Open Arms Program, nine staff members left, including three RNs, three milieu counselors (MC) and the nurse manager, medical director, and assistant medical director. During the first 18 months of CPS implementation, 28% of milieu staff resigned as a result of the change in care between December 2001 to June 2003— five RNs and five MCs. Since June 2003, 20% have resigned; however most were attributed to personal circumstances and only two resigned to feeling incompatible with the new program (K. Regan, et al., 2006).

Study #3: This study focused on the effectiveness of the CPS approach with 47 affectively dysregulated children with Oppositional Defiant Disorder (ODD) when compared with a parent training (PT) approach (Greene et al., 2004). Participants of the study were 50 children ages 4 -12 years with a diagnosis of ODD. Selection of the children to either the CPS approach or parent training approach was randomly assigned. Of the 50 children, three did not complete treatment (two in the CPS approach and one in the PT approach). Twenty-eight children completed treatment using the CPS approach, 19 children with the PT approach. Diagnostic eligibility included a two-stage assessment process: a telephone diagnostic screening and a full diagnostic interview with those that met initial entry criteria. Instruments used were The Kiddie Schedule for Affective

Disorders and Schizophrenia for School-Age Children – Epidemiologic version (K-SADS-E)(Orvaschel, 1994). Interviewers who administered the K-SADS-E assigned a Global Assessment of Functioning (GAF) score from the DSM-IV based on the information obtained from the diagnostic interview. The GAF summarizes a child's psychopathology and global functioning with a rating scale of 1 (worst) to 90 (best). Hollingshead's four-factor scale was used to determine socioeconomic status (Hollingshead, 1975). Cognitive ability with age-corrected scaled scores in Block Design and Vocabulary subtests were determined using methods described by Sattler with the Wechsler Intelligence Scale for Children – Revised (Greene, et al., 2004; Sattler, 1988; Wechsler, 1974). Children with a full-scale IQ below 80 or were actively suicidal or homicidal upon entry were excluded from the study.

Families assigned to the PT approach received Barkley's 10-week behavior management program (Barkley, 1997). Treatment components of this program included parent education and instruction on the causes of children's defiant behaviors; how to provide positive attention through use of special time; skills to increase compliant behaviors and effectiveness of parental commands; how to implement a contingency management program; the use of time-out; managing a child's behavior in public; and the use of a school-home report card (Greene, et al., 2004). Families received 10 weeks of treatment as outlined in the Barkley manual, with parents as the primary attendees. When indicated as per training, identified children were included in the process.

Families assigned to the CPS approach received treatment to assist the parents in understanding the correlation between cognitive factors and potential aggressive outbursts, specifically in the areas of frustration tolerance, regulating emotions, problem

solving, and adaptation; increasing awareness of three basic strategies when handling unmet expectations, including imposing adult will, the CPS approach, and removing the expectation with an understanding of the impact of each strategy within the adult-child interaction; and becoming adept in the CPS approach with their children in resolving conflicts and diffusing potentially explosive situations that could cause an aggressive outburst (Greene, et al., 2004). Although the CPS was also manualized, it was less prescriptive than the PT model. Treatment was provided within a 7-16 week range with session content determined based on need. The mean length of treatment for the CPS approach was 11 weeks (Greene, et al., 2004).

Clinicians delivering the two treatment approaches were doctoral level clinical psychologists. Two clinicians delivered parent training and identified behavior therapy as the primary treatment modality. Four clinicians delivered CPS and identified cognitive-behavioral therapy as the primary treatment modality. All clinicians received weekly supervision from the primary investigator to ensure adherence to the treatment manuals of both approaches (Greene, et al., 2004). Taking into account the potential volatility and aggressiveness of the children under study, children were permitted to remain on current medication regimens; however no additional medications were prescribed or administered as a component of either treatment approach (Greene, et al., 2004).

To preserve treatment integrity, all treatment sessions were audiotaped with 20% randomly selected and rated by a rater unaware of the nature of the two treatment conditions and the clinicians associated with each. An adherence scale developed for this study was used to rate the degree to which session content pertinent to each treatment approach was present in each respective session. The adherence scale consisted of two

subscales: The PT subscale contained four items that described essential PT features not present in the CPS approach and the CPS subscale identified four items essential to CPS and not PT. A 5-point rating scale was used, ranging from 0 (session did not focus on or mention one or more of the essential items) to 4 (major focus on one or more of the essential items in the session)(Greene, et al., 2004).

Several instruments were completed by parents pre-and-post treatment: (a) Parent-Child Relationship Inventory (PCRI) (Gerard, 1994) assessed general quality of parent-child interactions; (b) Parenting Stress Index (PSI) (Abidin, 1995), a comprehensive 101-item instrument divided into 13 subscales (7 for parent, 6 for child) assessed parents' views of their own functioning as parents, and their child's behavior problems and their parental frustration that resulted while attempting to develop their relationship; (c) ODD Rating Scale (ODDRS), an unpublished instrument developed by Ross Greene was administered pre and post treatment, and at the 4-month follow-up. Based on the DSM IV diagnostic criteria for ODD, this instrument rated the frequency and severity of ODD-related behaviors on a 5-point Likert scale, ranging from 1(false/never) to 5 (always true/very often) (Greene, et al., 2004). The last instrument Clinical Global Impression (CGI; National Institute of Mental Health, 1985) was completed by the clinician post-treatment and by the parents at the 4-month follow-up. The instrument measured the degree of the child's behavioral improvement since the beginning of treatment, using a 7-point Likert scale ranging from "very much improved to very much worse." (Greene, et al., 2004).

At the end of the study, the researchers found that the Collaborative Problem-Solving approach (a cognitive behavioral model) resulted in significant improvements

over the Parent Training approach in multiple areas of functioning and across multiple informants at different data points. As compared with the improvements noted with the PT model, all improvements produced with CPS were either equivalent or superior (Greene, et al., 2004). Although there was little difference in the number of children on medication throughout the study, it should be noted that there were significantly greater number of medication changes in medication regimens with children in the CPS approach than children in the PT approach. The researchers attributed this occurrence to the medication-education module included in the CPS approach that addresses the correlation between attention deficit/hyperactivity disorder and mood disorders and the benefits of medication in controlling symptoms (Greene, et al., 2004). The vast majority, however, had two or fewer medication changes during active treatment, regardless of the treatment approach. The greater flexibility of the CPS approach with each treatment session may have also positively contributed to the outcomes. Clinicians were guided by the individual needs of each child and family each week and structured the treatment session accordingly, based on six treatment modules from the CPS manual. Although each child and family was limited to 16 sessions, the treatment duration was flexible, allowing multiple sessions for a particular topic or skill set. The researchers believed this level of individualization enhanced the validity of the CPS model and improved compliance; however they also acknowledged that although the specific components of the CPS approach contributed to the positive outcomes, the emphasis on individualized treatment may have also been a factor (Greene, et al., 2004).

Study #4: A five-year prospective inpatient study was conducted to examine the patterns of restraint and seclusion use before and after the implementation of the

Collaborative Problem-Solving approach. The data was collected on a 15-bed inpatient child psychiatric unit for school-age children at Yale-New Haven Children's Hospital. During the five-year study (October 1, 2002-September 30, 2007, fiscal years 2003-2007), the unit averaged 198 admissions annually with a bed occupancy of 92% and an average length of stay of 29 days (Martin, Krieg, Esposito, Stubbe, & Cardona, 2008). During the study, 755 children were hospitalized with a total of 998 admissions from fiscal years 2003 to 2007. Demographic and clinical variables collected included sex, age, race-ethnicity, admission status (emergency service versus other access point), insurance status (Medicaid versus other types), length of stay, readmissions within the year (yes/no), and primary discharge diagnosis. Most of the children were white males with a median age was 11 years (range 3 to 15). Seven diagnostic categories were identified: adjustment disorders, anxiety disorders, bipolar disorders, depressive (non-bipolar) disorders, hyperactivity, psychosis, and assorted mental disorders (Martin, et al., 2008). The average length of stay dropped over the five year period, from 35 days in FY 2003 to 22 days in FY 2007. Although the primary diagnostic composition changed over the five year period, all the children carried either a mood and/or behavioral diagnosis (Martin, et al., 2008).

Beginning September 2005 for a six-month period, the inpatient unit implemented the CPS approach. In order to maximize staff exposure to the model, staff training occurred on all shifts and included an initial three-hour overview of the CPS model that covered model concepts and implementation with written materials, and a twice weekly 90 minute clinical supervision with the developers of the CPS model via videoconference. Specific cases involving children and their challenging behaviors were

discussed in the context of the CPS model during each session. Staff attended three supervision sessions per month during the training period (Martin, et al., 2008).

During the implementation phase, documentation was revised to include the principles of the CPS approach (identification of behaviors, triggers, and interventions) while maintaining all clinical, administrative, and regulatory documentation requirements. Weekly group supervision, excluding the initial video-conference component, allowed for continuity and consistency in the implementation of the CPS approach after the active implementation phase ended (Martin, et al., 2008).

Data collection spanned three years prior to and 1.5 years after the six-month implementation of the CPS model. Data included use of restraint and seclusion, date, time, and duration of each episode. Data on staff injuries from fiscal years 2005 through 2007 were available for review, based on formal incident reports filed with the hospital's occupational health service (Martin, et al., 2008).

The results of the five-year study were impressive: There were 559 restraint episodes and 1,671 seclusion episodes in total. After the CPS approach was implemented, there was a 37.6-fold reduction in restraint use, from 263 episodes to seven episodes per year and a 3.2-fold reduction in seclusion, from 432 episodes to 133 episodes per year. The mean duration of restraint and seclusion use dramatically decreased, from 41 ± 8 to 18 ± 20 minutes per restraint episode, and 27 ± 5 to 21 ± 5 minutes per seclusion episode (Martin, et al., 2008). There was also a transient increase in staff injuries related to patient assaults during the early phases of implementation. The researchers overall conclusions were that CPS had a positive impact in the reduction of restraint and seclusion use in their study and that it was a promising approach for treatment of children

in acute inpatient psychiatric settings. It was recommended that further research was needed to validate its effectiveness in other restrictive settings (Martin, et al., 2008).

CHAPTER III

3 METHODS

3.1 Introduction

The purpose of this chapter is twofold: 1) describe the original performance improvement project (Phase 1) implemented on the inpatient child psychiatric unit from July 2006 through March 2007; and 2) present the methodology and design of the current study (Phase 2) using the data collected from the original project. This includes the research design, participant selection, inclusion criteria, procedure for data collection and analysis, and any ethical considerations, including protection of human subjects.

3.2 Phase 1 – Original Performance Improvement Project

The challenges of treating children with psychiatric and behavioral disorders in an inpatient hospital setting had increased over the years due to the changes in healthcare and insurance reimbursement. Our inpatient child psychiatric unit experienced this firsthand. For many years, the admission criteria were less restrictive and children were admitted to our unit for a variety of conditions and varying levels of acuity across the diagnostic spectrum. Our treatment team, consisting of psychiatrists, registered nurses, non-licensed mental health associates, licensed social workers, an occupational therapist, and teachers from the Board of Education, worked collaboratively to develop the child's treatment plan of care based on symptoms requiring hospitalization and the interventions necessary for stabilization. Interventions that included, but not limited to medication management, behavioral limit setting, individual and family therapy, school, and a behavioral environment that was both safe and therapeutic. Admissions lasting several

weeks to months were considered the norm. Insurance reviews justifying the continued need for hospitalization were not as prevalent and although length of stay on the inpatient unit was monitored, it was not a major concern. As a result, a child could remain hospitalized indefinitely with full financial reimbursement to the hospital until the child demonstrated increased ability to function, when symptoms abated, and had stabilized enough to continue care in a less restrictive setting with an outpatient provider upon discharge.

One significant byproduct of having a unit with a longer length of stay with children of varying degrees of psychiatric and behavioral dysfunction was the milieu stability it created for the children and staff. The longer lengths of stay limited the availability of beds for new admissions. The decrease in patient turnover gave staff greater opportunity to spend quality time with each child. The unit as a therapeutic intervention in and of itself strengthened as a result. Not every child was in crisis at the same time. It was expected that new admissions would need time to adjust to the structured locked setting but that over time the child would acclimate to the unit, feel more comfortable with staff and other children, and would follow the unit structure and therapeutic program with less disruption and/or noncompliance. However, this changed when admission criteria became more restrictive and children were no longer admitted for conditions that could be successfully treated in an outpatient setting.

Psychiatric diagnoses have always been exempt from the Diagnose-Related Groups (DRGs), a classification system of medical and surgical diagnoses grouped by products and services a patient receives in a hospital and the associated predetermined costs paid to the hospital to deliver those products and services within a prescribed

timeframe (Gottlober, Brady, Robinson, & Davis, 2001). Since the 1980's and through its evolution into the 21st century, DRGs have dramatically changed how hospitals are reimbursed for care. Instead of reimbursing the hospital for all costs and charges, a predetermined rate of payment and length of stay for the hospitalization is based on the patient's diagnosis. The DRG model, unlike past payment structures where services were billed separately, bundles both labor and non-labor resources and includes room and board, routine nursing care, diagnostic and ancillary services, and most routine operating costs attributable to treating the patient with a particular disease (Gottlober, et al., 2001). For psychiatry, managed care became our equivalent gatekeeper. Criteria for hospitalization for all ages and diagnoses, including the child and adolescent populations, became tighter along with reimbursement. Length of stay became a major focus and staff were challenged to provide a level of care that would stabilize a patient in the shortest amount of time and discharge them back to the community, receiving a lower level of care.

At the beginning of 2005, our unit's length of stay was reduced to 14 days or less in response to managed care edicts and reimbursement limitations. The decrease in length of stay had a negative impact on patient acuity and overall stability of the unit. We no longer admitted children with a wide variation of psychiatric and behavioral disorders and acuity. The majority of children admitted were the most decompensated, unable to function at home, in school, in the community, had failed outpatient treatment, and were at the greatest safety risk for hurting themselves or others. The unit was frequently in a state of heightened activity, new admissions were an everyday occurrence, causing a disruption to the unit's routine and the nurses' availability to attend to the needs of the

children currently hospitalized. Patients no longer received the benefits derived from a calmer, longer-term hospitalization. Staff became more impatient and frustrated. The children in response were more disruptive, uncooperative, explosive, or aggressive. Patient care became less about the therapeutic relationship and more about controlling or containing acting out behaviors. Staff imposed more time-outs, restricted privileges, open and locked seclusion, and four point restraints.

Staff morale was extremely low. As the Nurse Manager of the unit during this time, the clinical staff (licensed and non-licensed) were vocal about their dissatisfaction with the unit and no longer felt capable of maintaining a safe and therapeutic environment with the rapid patient turnover of approximately 14 days or less. A paradigm shift in our approach to patient care and staff involvement was necessary in order to provide a safer and more therapeutic patient and staff experience. The interventions we implemented were no longer effective with the change in patient acuity. Our program required a radical reinvention in clinical practice and unit philosophy. After extensive discussions and literature reviews, the clinical and administrative team selected the Collaborative Problem-Solving approach as the basis for a performance improvement project, based on the positive outcomes achieved with treating explosive children at the Cambridge Hospital's Open Arms program in Massachusetts.

Specific Aims of the Project

Due to our comparable bed capacity and patient population, the specific aims of our performance improvement project (Phase 1) were similar to the aims of the Open Arms program: (1) to adapt the therapeutic milieu of the unit to focus on improving interactions between patients and providers; (2) help staff replace old values, such as

adherence to group norms, consistency, and staff control with new values of nurturance; and (3) provide learning opportunities and choices based on the individual needs of each patient (K. Regan, et al., 2006). Depending on the outcomes of the project, the long-term goal for our unit was to use the data to gain support and funding to design a new comprehensive clinical program with formal training and routine competency assessments for all staff.

Hypotheses

By implementing the Collaborative Problem-Solving approach, we hypothesized there would be a reduction in the use of four point restraints and locked seclusion, decreased use of PRN medications for aggression or explosive behaviors, a decrease of patient and staff injuries that resulted from placing an explosive child in locked seclusion or four point restraints, and a decreased need for hands-on security assistance to assist with the most restrictive interventions.

Basic Themes of the Collaborative Problem Solving (CPS) Approach

In full acknowledgement, the language and concepts presented in the staff manual distributed in preparation for the training and implementation of the Collaborative Problem Solving approach were adapted or taken directly from “Treating Explosive Kids, The Collaborative Problem Solving Approach” (Greene & Ablon, 2006). Alexander Kolevzon MD, the external member of my dissertation committee served as the Unit Chief of the child and adolescent inpatient unit during the time the performance improvement project was implemented. Excerpts from the training manual and the outcomes presentation presented below have been edited for specific references and identifiers to the inpatient unit.

According to Greene and Ablon (2006), the following are true of children and behavior:

1. Kids already know “the rules” and will do well if they can. If they are not doing well, it is because they are unable.
2. Explosive children are a heterogeneous group with variation in their backgrounds and needs.
3. Understanding the reasons a child behaves in a certain way should influence the interventions chosen to address that behavior.
4. There is no “one size fits all” approach to working with explosive kids or their families and therefore interventions work best when they are well-matched to the needs of the child.

Unlike traditional behavior modification programs, the CPS approach focuses on lagging cognitive skills in the domains of flexibility and adaptability, frustration tolerance, and problem solving. Negative behaviors are seen as learning deficits, not willful, deliberate acts. Establishing an inventory of these specific domains of cognitive deficits helps the clinician assess the needs of each child by identifying triggers for explosive behavior and tailoring the interventions to the individual needs of each child (Greene & Ablon, 2006).

Methods

The impetus for initiating the performance improvement project (Phase 1) was to find the best treatment approach that would create a more favorable therapeutic environment for the staff and patients by decreasing the use of the most restrictive

interventions with explosive and aggressive children and restore equilibrium to the unit.

We believed the CPS model would be that treatment approach.

Early in the design of our performance improvement project, we recognized there would be many challenges and limitations with staff training and program implementation. It was our original intent to incorporate the Clinical Inventory List developed by Greene and Ablon, to be used as part of the CPS approach during the admission process, daily rounds, and interdisciplinary treatment planning. Table 5 presents The Inventory.

Table 5

The Inventory (Greene & Ablon, 2006)

Executive Skills

- _____ Difficulty handling transitions, shifting from one mindset or task to another, adapting to new circumstances or rules
- _____ Poor sense of time/difficulty doing things in a logical or prescribed order
- _____ Disorganized/difficulty staying on topic, sorting through thoughts, or keeping track of things
- _____ Difficulty considering the likely outcomes or consequences of actions (impulsive)
- _____ Difficulty staying calm enough to think rationally

Language-Processing Skills

- _____ Often has difficulty expressing thoughts, needs, or concerns in words.
- _____ Often appears not to have understood what was said.
- _____ Long delays before responding to questions
- _____ Difficulty knowing or saying how he/she feels

Emotion Regulation Skills

- _____ Cranky, grouchy, grumpy, irritable
- _____ Sad, fatigued, tired, low energy
- _____ Anxious, nervous, worried, fearful

Cognitive Flexibility Skills

- _____ Concrete, black-and-white thinker; often takes things literally
- _____ Insistence on sticking with the rules, routine, original plan
- _____ Does poorly in circumstances of unpredictability, ambiguity, uncertainty

Social Skills

- _____ Difficulty attending to or misreading of social cues/poor perception of social nuances/difficulty recognizing non-verbal social cues
- _____ Inaccurate interpretations/cognitive distortions or biases (e.g., “It’s not fair,” “I’m stupid,” “Everyone’s out to get me.”)
- _____ Lacks basic social skills (how to start a conversation, how to enter a group, how to connect with people)

This inventory list was designed to guide clinicians in recognizing and evaluating the cognitive deficits of each patient, specifically focusing on five domains of (1) executive function; (2) emotional regulation; (3) social skills; (4) language processing; and (5) cognitive flexibility (Greene & Ablon, 2006). However, due to the extensive documentation changes that would result from incorporating the inventory list into our daily assessments and treatment planning, the clinical team decided to temporarily postpone using the documentation components of the CPS model and continue with the assessment tools and treatment plans already in place.

By postponing the documentation requirements of the CPS approach, the main focus for the project was teaching staff how to use the interactive collaborative interventions with the children. The interactive exchanges between staff and child would occur for all encounters, including a child's explosive episode. We felt this would be the most constructive for staff in achieving the immediate goal of decreasing acuity and the most rewarding, especially if the CPS approach prevented a child from being placed in locked seclusion or restraints during an explosive episode. However, due to the complexity of training all staff working the unit across the three 8-hour shifts, it was decided that only the dayshift staff working 7:00am-3:30pm would receive training as participants for the implementation phase. The selection of training only the day shift staff also supported our decision to delay the documentation components of the model as staff not trained would not be able to utilize the inventory list or other CPS documentation tools or language and would create confusion for the staff as a whole. We also decided to exclude the adolescent population, ages 13-18 years, from the project and only pilot the CPS approach with the children, ages 5-12 years. This made training of

staff and implementation of the CPS approach more manageable and focused with one patient population rather than two.

Although we did not approach our performance improvement project as research with a traditional research design, we did establish key parameters for data collection, staff education, program implementation, and assessment.

- Baseline data collection prior to staff training: 3 months (July, August, September, 2006)
- Orientation of the CPS approach with staff: 1 month (October, 2006)
- Training of day shift staff only: 1 month (November, 2006)
- Implementation of CPS approach (practice month): 1 month (December, 2006)
- Assessment of CPS approach: 3 months (January, February, March, 2007)

Outcome Measures

From July 1 – September 30, 2006, data was collected on the following outcome measures: (1) restraints – number of episodes; (2) locked seclusion – number of episodes; (3) PRN medication – for agitation only; (4) security calls for assistance during a child's explosive episode; (5) staff and patient injuries. Data collection involved children, ages 5-12 years. The adolescent population, ages 13-18, were excluded from the project.

Orientation – October 2006

Two initial two-hour orientation sessions were held with all daytime staff (7:00am-3:30pm shift). These sessions were staggered throughout the month and held at different times in order to provide opportunity for all staff to attend without depleting staff resources and compromising unit safety. Goals and objectives for the orientation were provided and reviewed with staff in detail. Focus of orientation was to educate day

shift staff to the principles and practice of the CPS model. Feedback was solicited using anonymous evaluations in order to improve orientation in the future.

Training – November 2006

Multiple group supervision offerings were built into the work schedule each week. This gave staff an opportunity to receive the required one hour weekly supervision based on their availability. The daily staff assignments were changed in order to ensure that our non-licensed clinical staff, called Mental Health Associates (MHAs), were available to participate in morning report with the registered nurses. The focus of group supervision reinforced the tenets of the CPS model that were becoming integrated into the unit's culture. All day shift staff were expected to slowly incorporate the language, principles, and techniques of the CPS approach into all milieu activities and clinical discussions. Examples of staff-child clinical interactions and verbal scripts that staff could use with patients were incorporated into the training.

Implementation – December 2006

The one-hour weekly clinical supervision requirement continued throughout the implementation stage. There was an expectation that all daytime staff utilize a CPS approach in all clinical encounters with children, including explosive episodes. A debriefing session occurred after a child's explosive episode to address what worked well, what needed improvement, plus a review of any ongoing issues, concerns, and challenges. Data collection continued on all identified variables: number of four point restraint episodes, number of locked seclusion episodes, use of PRN medication for agitation only, security calls for assistance during a child's explosive episode, and staff

and patient injuries. During this stage, the learning curve for staff continued as they practiced new skills and approaches to crisis intervention.

The remaining clinical staff that worked off shift (3:00pm – 11:30pm evenings and 11:15pm – 7:15am nights) continued to initiate interventions that were part of the unit's current clinical program, including PRN medication for agitation, time-outs to chair, bedroom, open seclusion, restricted unit or off-unit privileges, or in extreme cases locked seclusion or four point restraints.

Assessment – January -March 2007

During the assessment stage, it was expected that all dayshift staff would be proficient in the philosophy and use of the CPS approach and were implementing interventions consistently in all clinical encounters with patients, including explosive episodes. Data collection on the number of restraints and locked seclusion episodes, use of PRN medication for agitation, number of security calls for assistance during a child's explosive episode, and the number of staff and patient injuries continued.

Post-Assessment Analysis

In April 2007, at the end of the assessment phase, an analysis of the data collected from July 2006 through March 2007 was conducted. Success of the program would be determined based on whether the analysis showed a decrease in any or all of the indicators measured since the implementation of the Collaborative Problem-Solving approach.

Results – Phase 1 Summary

Locked Seclusion and Four-Point Restraints

Based on the review of raw data on the number of locked seclusions and four point restraints that occurred between July 1, 2006 and March 31, 2007, the analysis showed there were minimal differences observed between pre- and post-training periods. The use of locked seclusion in particular increased during the assessment phase. There were no four-point restraints used during the nine months of the project.

There were 14 locked seclusions during the initial baseline data collection, prior to staff orientation and training of the CPS model. There were 11 locked seclusions during the orientation, training of staff, and the implementation phase (total of 25 locked seclusions), and a total of 19 locked seclusions during the assessment phase. In total, there were 44 locked seclusions during the 9-month time frame.

We had hypothesized that locked seclusion would decrease with the Collaborative Problem-Solving approach. However, the raw data did not support our hypothesis, at least at first glance. We were curious as to why there were minimal differences between baseline data collection and the orientation/training/implementation phase and why there was an increase in locked seclusion during the assessment phase, the period where day staff were fully trained and incorporating the CPS approach in their interactions with children. This required further analysis of the data to determine cause and effect. Historically, we have always had a much lower incidence of four-point restraints relative to locked seclusion on the child unit so we were not surprised by the outcome that during the 9-month study project, no restraints were used to contain aggressive, explosive, or acting out behaviors.

Table 6

*Use of Locked Seclusion and Four-Point Restraints Data from PI Project – Phase 1
(July 1, 2006 – March 31, 2007)*

Time Frame	Number of Locked Seclusions	Number of Restraints
July – September 2006 Baseline Data Collection	14	0
October – December 2006 Orientation/Training/CPS	11	0
January – Marcy 2007 Assessment – CPS	19	0

Trained versus Non-trained Staff and Locked Seclusion

There were 44 locked seclusions that occurred during the 9-month performance improvement project. Data was divided into three phases to coincide with the baseline data collection, orientation, training and implementation of the CPS approach, and the assessment phase.

During the baseline data collection phase from July 1, 2006-September 30, 2006, there were 14 locked seclusions. Although the staff had not been trained in the CPS model, we had already identified that the day shift staff would receive the training.

The day shift had six locked seclusions (43% of the 14 locked seclusions), initiated by four RNs who normally worked the dayshift. Of the four RNs, two initiated one locked seclusion each. The other two initiated two locked seclusions each.

The evening shift had eight locked seclusions. Of the eight locked seclusions (57% of the 14 seclusions), one was initiated by a dayshift RN working an extra shift; two locked seclusions were initiated by the same RN not scheduled to be trained. The

remaining five locked seclusions were initiated by five evening RNs not scheduled to be trained in the CPS approach. There were no locked seclusions on the night shift.

Table 7

Baseline Data and Staff Identified for Training in CPS Model that Initiated Locked Seclusion from PI Project – Phase 1 (July 1 – September 30, 2006)

Shift	Locked Seclusion	To be Trained	Not to be Trained
Day	6	4	0
Evening	8	1	6
Night	0	0	0

During the orientation, training, and implementation phase of the PI project from October 1 – December 31, 2006, there were 11 locked seclusions. Day shift staff had started training in the CPS model and the collaborative interactions associated with the program. It was expected that staff would begin utilizing the CPS approach during interventions with children, especially during an explosive episode. There was a slight decrease in the use of locked seclusion during this time frame.

There were four locked seclusions on the day shift (36% of the 11 locked seclusions) initiated by three RNs. One dayshift RN trained in the CPS model initiated two of the locked seclusions; one trained dayshift RN initiated one locked seclusion, and one locked seclusion was initiated by a night shift RN, not trained, working an extra shift.

There were seven locked seclusions on the evening shift (64% of the 11 locked seclusions). Four of the seven were initiated by two trained day shift nurses working extra shifts on evenings. They each initiated two locked seclusions. The remaining three locked seclusions were initiated by three evening RNs not trained. There were no seclusions on the night shift.

Table 8

Trained versus Non-Trained Staff in CPS Approach that Initiated Seclusion from PI Project - Phase 1
(October 1 – December 31, 2006)

Shift	Locked Seclusion	Trained	Non-Trained
Day	4	3	1
Evening	7	4	3
Night	0	0	0

There were 19 locked seclusions that occurred during the assessment phase of the PI project, January 1 – March 31, 2007. This time frame saw the highest use of locked seclusion during the 9-month period and occurred after training of the CPS approach had concluded and full implementation of the model on the day shift was expected.

There were six Registered Nurses who initiated the 19 locked seclusions that occurred across the three shifts during this time period. Three nurses from the day shift and trained in the CPS approach accounted for 12 of the 19 locked seclusions. Three nurses were from the evening and night shifts and were not trained.

Ten of the 19 locked seclusions occurred on the day shift (53%). Of the ten locked seclusions, nine were initiated by trained staff (90%). One RN initiated four locked seclusions; one RN initiated three; and one RN initiated two locked seclusions. The remaining locked seclusion was initiated by an RN hired to work the day shift from another nursing unit and was not trained (10%).

Eight of the 19 locked seclusions occurred on the evening shift (42%). Three of the eight were initiated by two trained day shift RNs hired to work an extra shift (37.5%). One of the two RNs initiated locked seclusion twice. Five locked seclusions were initiated by staff not trained in the CPS approach (62.5%). One evening RN initiated locked seclusion twice.

There was one locked seclusion on the night shift that was initiated by a night shift RN not trained in the CPS approach.

Table 9

Trained versus Non-Trained Staff in CPS Approach that Initiated Seclusion from PI Project - Phase I
(January 1 – March 31, 2007)

Shift	Locked Seclusion	Trained	Non-Trained
Day	10	9	1
Evening	8	3	5
Night	1	0	1

At first glance, one could conclude that the CPS model was ineffective in de-escalating explosive behaviors based on the initial review of the raw data. Excluding the 14 locked seclusions that occurred during the baseline data collection phase and prior to staff training (July 1 – September, 2006), there were 30 locked seclusions that occurred between October 1, 2006 – March 31, 2007. Nineteen of the 30 locked seclusions (63%) were initiated by staff trained in the CPS model as compared to 11 locked seclusions (37%) initiated by non-trained staff.

When reviewing the breakdown by shift, 14 locked seclusions occurred on the dayshift: 12 by trained staff, two by non-trained staff. Evening shift had 15 locked seclusions: seven staff were trained, eight staff were not trained. There was one locked seclusion on the night shift, initiated by one staff not trained. Although the majority of the 30 locked seclusions were initiated by trained day shift staff, the data showed that there were slightly more locked seclusions that occurred on evenings and nights (16 total = 53.3%) versus the day shift (14 total = 46.7%).

Environment as a Precipitating Factor and Locked Seclusion

In determining the success or failure of the CPS approach, one must also consider precipitating factors that may have influenced the use of locked seclusion separate from staff training. One precipitant may have been environmental. The therapeutic milieu in and of itself was used as an intervention with a team approach as its foundation. Each shift was structured by supervised activities and groups, socialization with staff and peers, school during the day, gym time, art, music, pet therapy, and free time. Unit rules guided the children in appropriate behaviors and staff acknowledged those behaviors with positive reinforcements, such as walks off the unit with staff to the cafeteria, or consequences when necessary such as a time out in a chair in order to regain behavioral control. By introducing the Collaborative Problem-Solving approach on the day shift, the staff were able to enhance the unit milieu by using strategies and interventions that were more responsive and collaborative with children who displayed aggressive behaviors. However, additional milieu/environmental challenges must be considered when evaluating the use of locked seclusion and whether or not the CPS approach was successful.

Depending on census, unit acuity, new admissions that diverted staff's availability in the milieu, other children that required increased staff time and attention due to individual need, visiting time with parents or legal guardians that may have caused increased emotional responses from children during those visits, staffing patterns and skill mix for the shift, staff off the unit for a meal break, and a host of other undocumented variables outside of staff's control, the unit conditions regardless of shift and staff training may have escalated behaviors in more than one child causing a more

chaotic experience. As a result of any of the scenarios described above, there may have been more than one child impacted by environmental stress that received a staff intervention that successfully averted an explosive episode. It is possible that staff provided multiple interventions to multiple children during a time of heightened activity or stress to prevent and curtail aggressive or explosive behaviors and maintain safety, all of which were successful except for the one child that required the most restrictive intervention. The data collected did not document milieu/environmental factors that may have contributed to a child being placed in locked seclusion. In the absence of such data, it would be unreasonable to assume that staff training alone was the only variable that influenced the use of locked seclusion.

Unit Staffing, Skill Mix and Locked Seclusion

Another precipitating factor may have been unit staffing and skill mix. Unit staffing for each shift was scheduled well in advance with permanent staff hired to work the child psychiatric unit. Each shift had an established skill mix ratio of RNs to non-licensed staff and would be adjusted based on census and acuity. With a census of 15 children (full census), the day and evening shifts were staffed with six: three RNs and three non-licensed staff, or four RNs and two non-licensed staff. The night shift ratio was two RNs and two non-licensed staff.

When vacancies occurred due to sick calls, vacations, and other unforeseen circumstances that required additional staff beyond the normal staffing pattern, staff were hired based on need (RN or non-licensed staff), staff competency for the child psychiatric population, and availability to work. Every effort was made to fill vacancies with permanent child psychiatric staff first as overtime or extra shifts before looking for staff

that regularly worked the child unit from the other psychiatric floors. There were times, however when vacancies were filled with per diem psychiatric RNs and/or by floating staff from the adult psychiatric units to the child unit out of necessity to cover the shift for safety.

Whenever staff were hired for a day shift vacancy, the criterion of CPS training was never a consideration. As a result, the staff hired for the day shift were more than likely not trained in the CPS approach and/or as familiar with child psychiatry in general. This skewed the day shift's efforts in CPS implementation. Despite best efforts, untrained staff or staff unfamiliar with the child unit in general were not equipped with the knowledge and skills to de-escalate a child during an explosive episode. As the nurse manager of the unit at that time, I witnessed trained staff on the day shift intervene and contain behaviors with locked seclusion that had already escalated beyond the benefits of the CPS approach, inadvertently caused by interactions and/or interventions initiated by non-trained or staff inexperienced with the child population. Without knowing the staffing patterns and the staff who actually worked the day shifts when locked seclusion occurred, it would be challenging to determine the effectiveness of the CPS approach and what factors, if any may have contributed to the outcome of locked seclusion use.

Child Responses to Non-Trained Staff and Locked Seclusion

Child reactions and responses to the inconsistencies of how staff intervened during a behavioral crisis between shifts may have also contributed to the use of locked seclusion. Children accustomed to a more collaborative interaction with trained day staff when emotionally upset may have negatively reacted to the traditional approaches of time outs, bedroom restrictions, and suspended privileges utilized with the non-trained staff.

Although in the minority, non-trained staff that worked the day shift still had opportunity to interact and provide interventions that were incongruent with the new day shift philosophy of collaborative care. This may have caused a child to react in a negative manner. Conversely, when trained day staff worked an extra evening shift, this individual too was in the minority, working a shift with non-trained staff that continued to utilize the unit's established behavior modification program and interventions. Trained staff may have attempted to provide a more collaborative approach with children experiencing distress; however in the absence of a team approach that utilized the CPS model, it would have been very challenging to implement and sustain as the only staff member utilizing that approach in a crisis. As much as non-trained staff may have negatively impacted the collaborative day shift environment, it is likely that trained staff working another shift with non-trained staff may have negatively influenced the environment as well. The dramatic contrast of approach with limit setting and interventions to de-escalate an emotionally distressed child may have subsequently created more distress and confusion for the child and perhaps created the perception that the unit was not safe due to these inconsistencies. In the absence of a cohesive team approach in containing escalating behaviors, locked seclusion may have been the only recourse to a child's explosive episode. Without concrete data, it cannot be determined what factors may have influenced the initiation of locked seclusion, even when trained staff were involved.

Five Children and Outlier Locked Seclusions

The last variable that must be considered when reviewing the increased number of locked seclusions and the success of the CPS approach is the number of locked seclusions that occurred with a small group of children.

There were 197 admissions with 167 individual children during the 9-month performance improvement project. Thirty children were readmitted. Of the 44 locked seclusions that occurred between July 1, 2006 and March 31, 2007, five children were responsible for 27 of the 44 locked seclusions (61.4%).

One child (Child A) was admitted twice and had five locked seclusions in the first admission and six locked seclusions in the second admission, totaling 11 locked seclusions out of 44 (25%).

One child (Child B) had two locked seclusions in the first admission and five locked seclusions in the second admission, totaling seven out of 44 locked seclusions (16%).

Two children (Child C and Child D) were admitted once and had three locked seclusions each, totaling six out of 44 locked seclusions (13.6%).

One child (Child E) was admitted twice and had one locked seclusion in the first admission, two locked seclusions in the second admission, totaling three out of 44 locked seclusions (6.8%).

Table 10 presents those findings by month.

Table 10

*Outlier Locked Seclusions by Child, Month, and Shift from PI Project – Phase 1
(July 1, 2006 – March 31, 2007)*

Child	Month	Locked Seclusion	Day	Evening	Night
A	July	3	1	2	0
	August	4	1	3	0
	September	1	0	1	0
	October	2	0	2	0
	November	1	0	1	0
B	October	2	1	1	0
	January	1	1	0	0
	February	2	1	1	0
	March	2	0	2	0
C	March	3	3	0	0
D	March	3	1	2	0
E	September	1	0	1	0
	December	2	2	0	0
Total		27	9	15	0

As 27 out of 44 locked seclusions (61.4%) involved only five children, it could be hypothesized that these five children were treatment resistant from the start and therefore unresponsive to any less restrictive intervention, including the CPS approach.

Other Variables Impacted by the Collaborative Problem-Solving Approach

There were three other variables that were reviewed during Phase 1 that may have been impacted by the CPS approach. These included the use of PRN medications for anxiety, agitation or aggression, the number of security calls made by staff requesting assistance in response to an explosive episode, and the number of staff and patient

injuries that resulted during an explosive episode. Each variable will be discussed separately.

Use of PRN Medication

It should be noted that the data collected for use of PRN medication during the 9-months of the Phase 1 project included the adolescent unit, which had a maximum census of eight and was situated on the same floor as the child unit but contained in a separate and secured area. The training of the CPS model occurred on the day shift with child staff only. Day shift adolescent staff were not trained. However, staff responsible for collecting the PRN medication data during the PI project were psychiatric residents that worked both units. Aggregate data represent total PRN medication use for both populations. As a result of this error in data collection and reporting, child data could not be isolated and the decreased usage of PRN medications over the 9-month period could not be directly correlated to the CPS model. It may be hypothesized that the CPS model favorably influenced the outcome; however without the actual numbers associated with the child population, this is pure speculation.

During the baseline data collection phase prior to training, July 1 – September 30, 2006, there were 400 PRN medications given to children and adolescents on all three shifts for anxiety, agitation, or aggression. Average daily census was 19.

During the orientation, training of day shift child staff and implementation phase from October 1 – December 31, 2006, there were 325 PRN medications given to children and adolescents with an average daily census of 21. Although the overall census was higher, the number of PRNs given for anxiety, agitation, or aggression decreased.

For the assessment phase, January 1 – March 31, 2007, there were 323 PRN medications given to children and adolescents, with an average daily census of 20. As compared to the pre-training baseline data collection period where the census was slightly lower at 19 and the PRN use was extremely high at 400, the use of PRN medication for anxiety, agitation, or aggression continued to decrease with a slightly higher census over time. However, the impact of the CPS model on the decreased use of PRN medication could not be determined based on the aggregate collection of child and adolescent data.

Table 11

Use of PRN Medication, Phase 1

(July 1, 2006 – March 31, 2007)

Time Period	Number of PRN Medication	Average Daily Census
Baseline	400	19
Implementation	325	21
Assessment	323	20

Use of Security Officers during an Explosive Episode

There were 17 telephone calls made to security by child psychiatric staff, regardless of shift, for assistance with a child during an explosive episode during the baseline data collection period, July – September 2006. This period preceded staff training. Of the 17 calls for assistance, ten of those calls required a direct hands-on intervention by the security officers with a child to contain an aggressive episode. A hands-on intervention occurred when nursing staff had already initiated the locked seclusion process and needed security to assist with walking or carrying a child to the seclusion room.

There were 22 telephone calls made to security by child psychiatric staff for assistance during the implementation period, October – December 2006. Although the number of calls to security increased from the previous period, there were only six

episodes that required a hands-on intervention by security to contain a child's aggressive episode.

There were 20 telephone calls requesting security assistance with an aggressive child during the assessment period, January – March 2007. However, there were only two episodes that required a hands-on intervention by security to contain the aggressive episode. This dramatic decrease in the hands-on interventions by security correlates to the effectiveness of staff's ability to verbally de-escalate explosive or aggressive episodes in a calmer, more collaborative way without the need to contain the child with a more restrictive intervention such as locked seclusion. Although the data collected did not indicate the shift that the security calls were made, the influence of the CPS model on the milieu as a whole could be inferred with this outcome.

Table 12

Use of Security Officers for an Explosive Episode, Phase 1 (July 2006 – March 2007)

Time Period	Number of Security Calls	Hands-on Intervention
Baseline	17	10
Implementation	22	6
Assessment	20	2

Patient and Staff Injuries

As with the PRN medication data collection, the data collected on patient and staff injuries by the medical residents represent aggregate child and adolescent data. There was no differentiation between injuries sustained by staff, either child or adolescent, and injuries sustained by children or adolescents. The number attributed to any specific population was not collected. As a result of this error in data collection and reporting, child data could not be isolated and the decreased number of injuries for either

patient or staff over the 9-month period could not be directly correlated to the CPS model.

During the baseline period of July-September 2006, there were 12 patient/staff injuries that resulted from containing a patient's aggressive episode. Average daily census was 19. During the orientation, training, and implementation period between October and December 2006, there were 15 reported patient/staff injuries with an average daily census of 21. During the assessment period between January and March 2007, there were only 7 patient/staff injuries with an average daily census of 20.

It may be hypothesized that the CPS model favorably influenced the overall outcome; however without the actual numbers associated with the child population and child psychiatric staff, it is only an assumption that the CPS model successfully contributed to the decrease in the overall injuries sustained by patients and/or staff. The impact and direct correlation of the CPS model on the decreased patient and staff injuries could not be determined.

Table 13 *Patient and Staff Injuries, Phase 1* (July 1, 2006 – March 31, 2007)

Time Period	Number of Injuries	Average Daily Census
Baseline	12	19
Implementation	15	21
Assessment	7	20

Limitations of the Project

The purpose of this PI project, Phase 1 and the implementation of the Collaborative Problem-Solving approach was to actively address the increased patient acuity and subsequent aggressive episodes that were occurring over time with a more therapeutic approach to care that involved less restrictive interventions. Although all staff

agreed that change was necessary in order to decrease the unit's acuity and embraced the idea of trying something new, there were many challenges and limitations to the project.

Some senior RNs were reluctant to adopt the new CPS approach due to its labor-intensity and their own fears of change. Differences in formal education and clinical skill between licensed and non-licensed staff created inconsistencies in implementing the CPS approach. Mental Health Associates, our non-licensed staff with some college education, were eager to change to a new approach, but had only limited skills and support to do so.

Only day shift child staff received training. This limitation, unbeknownst to us when we set up the parameters of the PI project, ultimately had a negative effect on the unit and staff. The unit as a whole was comprised of two units, one 15-bedded child unit with designated staff and one eight-bedded adolescent unit with designated staff. As we progressed with the training of day shift child staff, some of the staff from the adolescent unit and/or evening and night shift staff from the child unit verbalized dissatisfaction and frustration regarding not being involved or given new skills or opportunity to effect change. They felt left out. The disparities between the CPS model and our traditional limit setting and interventions became especially evident when child staff, trained or not trained, worked a different shift from the one they were permanently hired for. Based on the increased use of locked seclusions throughout the 9-month period, it could be hypothesized that obvious inconsistencies between approaches to care created a negative, stressful, and perhaps mistrustful environment for the children when the unit had staff working from a different shift. These inconsistencies and differences may have increased the unit's acuity inadvertently and caused the children who were in tenuous control at best to become more explosive and aggressive thus increasing the use of locked

seclusion. Had we the resources and time to devote to a larger, more substantial “make over” of the child psychiatric unit, all three shifts would have been trained to implement the CPS approach for consistency. This would have strengthened the implementation of the CPS model and provided a more accurate assessment of the outcomes to determine whether the model was successful.

Clinical leadership was not sufficiently available to supervise daily interactions between patients and staff in an ongoing and consistent manner. Supervision often occurred after the fact, not in real-time when it would have been most beneficial to discuss interventions with aggressive patients immediately after they occurred.

Administrative pressures, such as decreased length of stay, need to maintain patient volumes, and admission criteria from insurance companies that limited our admissions to the most acute cases impeded the clinicians’ ability to perform comprehensive assessments and develop individualized plans as the CPS model dictated. We lacked professional staff resources and time. As compared to other units, such as Yale New Haven Hospital and Cambridge Hospital where CPS was successfully implemented, our inpatient unit was larger with a higher census, more admissions, and fewer licensed professional staff providing care such as social workers and psychologists.

The collection of data where there was no differentiation between the child and adolescent populations negatively skewed the analysis of PRN medication use and patient and staff injuries. Although it was not clear why this occurred, it could be attributed to miscommunication by unit leadership with the psychiatric residents or a misunderstanding by the residents as to what and how the data should be collected.

Finally, the PI project was not set up as a true research study. We were interested in a quick fix and recognized that a formal study would require more time and resources than we had at our disposal at the time. In hindsight, the data collection should have been more structured with clearer guidelines to the psychiatric residents regarding the focus on child psychiatry only and the specific variables of interest. However, I do believe for the areas that concerned us most, specifically the use of locked seclusion, the PI project, Phase 1 provided us with valuable data that supported the implementation of the CPS model.

3.3 Dissertation - Introduction – Phase 2

As a result of the findings from Phase 1 of the project, I was interested in re-analyzing the original data and reviewing the medical records of the children who were admitted during the 9-month period to see whether there were other variables that may have influenced any of the outcomes, specifically the use of locked seclusion.

One major limitation of Phase 1 was that the analysis did not include the evaluation of the clinical profiles of the children who were most responsive to the CPS approach. Anecdotally, I was aware we had an increased population of children admitted to our child unit with histories of abuse and living in foster care. I was aware that previous research studies had identified children with histories of severe maltreatment or abuse as high risk and that abused children experienced a wide range of psychosocial, psychiatric, and emotional disorders with one or more co-morbidities (Haugaard, 2004).

In addition to the variables that were analyzed in Phase 1 such as the number of locked seclusions, use of PRN medications, number of security calls, and number of patient/staff injuries, we collected data on each child's age, sex, date of admission and

discharge, and a preliminary admission diagnosis. However, we did not analyze that data in Phase 1 nor did we consider or collect data on a child's history of trauma. The analysis of the clinical profiles of the children most responsive to CPS would have been an important component in determining the validity and effectiveness of this model with specific child psychiatric populations. For example, was the CPS approach effective in maintaining behavioral control with children of a particular age, gender, or psychiatric diagnosis? Was the CPS approach successful in keeping higher at risk children such as those with histories of trauma from being placed in locked seclusion during an explosive episode? These were the questions that the PI Project, Phase 1 did not answer.

I believe our PI Project was successful as it provided us with a platform to critically examine the manner in which we were delivering patient care at the time and explore alternative interventions that were successful on other child psychiatric units at other hospitals. However, in order to answer the questions posed above, the logical next step was to do a more in-depth analysis, using the existing Phase 1 data as the foundation and expanding the study to include additional data not previously collected or reviewed. As such, the specific aim of this dissertation, what I identified as Phase 2, was to further analyze previously collected data and collect and analyze new data to determine what variables, if any, impacted the use of locked seclusion. Specifically, I was interested in the effectiveness of the CPS model with traumatized children and whether this collaborative approach kept these children from being placed in locked seclusion during an aggressive or explosive episode.

3.4 Dissertation - Research Design – Phase 2

The research methodology for this dissertation, Phase 2, was a retrospective quantitative design. Previously collected data on locked seclusion was analyzed. A comprehensive medical record review of each child admitted to the inpatient child psychiatric unit between July 2006 and March 2007 provided supplemental demographic and diagnostic data, pertinent trauma or abuse histories not previously collected, aggressive or explosive behaviors, staff interventions in response to those episodes, including the use of locked seclusion, and child responses to staff interventions. Responsiveness to the CPS approach was correlated with the absence of locked seclusion use during a child's explosive episode. No new medical records were reviewed, only the medical records of children included in the Phase 1 project.

3.5 Variables

The aim of this study was to determine what independent variables, if any, were associated with a child being placed in locked seclusion (dependent variable). The particular variable of interest was history of abuse and whether there was a direct correlation between this variable and locked seclusion use. I also wanted to determine whether children with abuse histories were placed in locked seclusion at a rate different from children without abuse histories. Due to the absence of specific documentation and assessment tools that were not used by staff in Phase 1, the Collaborative Problem-Solving approach could not be measured directly as an independent variable. The effectiveness of this intervention and its relationship to locked seclusion could only be inferred based on the outcomes of the other study variables and locked seclusion.

Table 14

Additional Variables of Interest for Phase 2 – not previously collected or analyzed

Variable	Description
Diagnosis	Axis I Primary and Secondary Discharge Diagnosis
History of Abuse	Presence/Absence of abuse for all 197 admissions
Type of Abuse	No Abuse, Physical, Sexual, Other, Multiple
Age	Children 5 – 12 years
Sex	Male, Female
Race/Ethnicity	White, Black, Hispanic, Other
Length of Stay	The number of days from admission to discharge
Locked Seclusion	Number of locked seclusions per child, per admission
Admissions (Date on Unit)	Date admitted to unit relative to the time period of CPS implementation

3.6 Setting

The data for this study was obtained from a 15 bed inpatient child psychiatric unit in an urban, teaching hospital located in New York, NY.

3.7 Participants

Inclusion criteria for participation in the study were children, ages 5 to 12 years who were admitted to the inpatient child psychiatric unit July 1, 2006 – March 31, 2007. The unit's Certificate of Need, issued by the New York State Office of Mental Health defined children as being between ages 5 and 12 years. There were no other restrictions for inclusion in the study.

3.8 Sample Size

The targeted number of participants for the analysis was based on the number of children, ages 5-12, admitted between July 2006 and March 2007 to the inpatient child psychiatric unit. There were 197 admissions involving 167 individual children.

3.9 Research Questions

- 1. What were the variables significantly associated with a child being placed in locked seclusion?*
- 2. Did children with histories of abuse evidence a significantly different rate of being placed in locked seclusion relative to admissions of children that did not involve histories of abuse within the context of the CPS intervention?*

3.10 Measures

Patient's Medical Record

The medical record of each child was retrieved and reviewed. A clinical profile was established to include demographic and diagnostic information; Axis I discharge diagnosis; history of child abuse, trauma, or neglect; behavioral episodes requiring staff intervention; occurrences of locked seclusion during explosive episodes; and the child's response to staff interventions, including the CPS approach.

Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR).

The DSM-IV-TR is the standard classification of mental disorders used by mental health professionals in the United States and is published by the American Psychiatric Association. It's application is used by clinicians and researchers in a wide array of contexts and provides a common language and standard criteria for the classification of

mental disorders (Administration for Children & Families, 2012). In addition, the DSM-IV-TR is used by psychiatric drug regulation agencies, pharmaceutical companies, insurance companies, and policy makers (Administration for Children & Families, 2012).

The multi-axial system of the DSM-IV-TR organizes each psychiatric diagnosis into five levels or axes that relate to diverse aspects of mental disorder or disability, medical illness, environmental factors and socialization, and level of functioning (Administration for Children & Families, 2012).

- *Axis I*: Clinical disorders, including major mental disorders, and learning disorders, including Autism. Requires immediate attention from a clinician.
- *Axis II*: Personality disorders and mental retardation. May not require immediate attention but may complicate treatment and therefore should be taken into consideration by the clinician providing care.
- *Axis III*: Acute medical conditions and physical disorders.
- *Axis IV*: Psychosocial and environmental factors contributing to the disorder or person's inability to function.
- *Axis V*: Global Assessment of Functioning or the Children's Assessment of Functioning for children and adolescents under age 18. An overall numerical rating scale that scores the individual's ability to cope with daily life (Allen & Tarnowski, 1989).

For the purpose of this study, all primary and secondary discharge diagnoses that fell under Axis I were reviewed with attention paid to the severity of symptoms that resulted in hospitalization.

Restraint and Seclusion Form

The patient-specific Restraint and Seclusion form was the formal documentation tool that recorded the patient's behavior and the events that occurred prior to initiating locked seclusion or restraints, the interventions provided by staff during the time the child was in locked seclusion or restraints, and the patient behaviors after locked seclusion or restraints were discontinued. This form was completed by a Registered Nurse and MD with each new occurrence of locked seclusion or restraints. Designed by the hospital's department of psychiatry and vetted through the department's nursing and physician leadership, the form met the regulatory mandates of the New York State Office of Mental Health and The Joint Commission and became a permanent document of the patient's medical record. This document included the following criteria:

- Patient demographics, including name, sex, date of birth, medical record number, diagnosis, physician/service, and date of occurrence.
- Identified event (locked seclusion or restraints).
- Identified behaviors indicating need for seclusion/restraints.
- Identified all less restrictive alternatives implemented without success prior to seclusion/restraints.
- MD assessment of patient's behavior and need for seclusion /restraints.
- MD order reflecting date and time of implementation and release.
- Patient safety search prior to entering locked seclusion/restraints for potentially dangerous items to harm self or others.

- Flow sheet documenting constant observation, patient's physical and behavioral status, vital signs, range of motion, and any fluids and toileting offered to the patient as needed at 15 minute intervals.
- Actual time of discontinuation of locked seclusion or restraints.
- Debriefing of patient with staff regarding the event within 24 hours after release.

Upon completion, the original document with flow sheet was placed in the patient's medical record. A copy of the form was then archived in a unit-based Restraint and Seclusion binder for staff reference and review during state and federal regulatory surveys. The forms reviewed for the study were from each patient's medical record.

3.11 Procedure for Data Collection

Eligibility for the study began with a review of the original data collected as part of the Performance Improvement Project, Phase 1 from July 1, 2006 through March 31, 2007. A total of 197 admissions involving 167 individual children were eligible for Phase 2 data collection and analysis.

A comprehensive medical record review of each child was completed to obtain demographic information not previously collected, such as race/ethnicity, as well as Axis I primary and secondary discharge diagnoses and history of abuse or trauma and type.

Clinical information from the medical record included the number of behavioral episodes requiring staff intervention, including the use of locked seclusion, and patient responses to the interventions used. All data collected were maintained in a secure location throughout the study.

3.12 Procedures for Data Analysis

Statistical analysis was conducted using the Statistical Package for the Social Sciences (SPSS), version 20. All new and previously collected data from the PI Project, Phase 1 were entered into a database by the researcher for analysis. Descriptive statistical analysis included means, standard deviations, frequencies, and percentages to summarize demographic variables of age, sex, and ethnicity as well as descriptive presentation of history of abuse, type of abuse, length of stay during hospitalization, date on unit, Axis I primary and secondary discharge psychiatric diagnoses, and locked seclusion use based on number of admissions.

The analysis of the data determined whether there were statistically significant relationships between identified independent variables and being placed in locked seclusion during an explosive episode. The effectiveness of the CPS approach would be inferred based on those significant relationships and how they impacted locked seclusion use.

3.13 Procedures for Protection of Human Participants in Research

Approval from the Institutional Review Boards from Duquesne University and the hospital in question was obtained, requesting access to the closed medical records of all children identified in the study for a comprehensive retrospective chart review. Although supplemental data collection did not require direct participation from any identified child from the 2006-2007 original performance improvement project, respect for confidentiality and anonymity was maintained at all times. No identifying data was used and all participants were assigned a code number, sequentially generated from 01. All materials related to the participant, such as medical record documents or the Restraint and

Seclusion form, were referenced by the assigned code number only. Documents and materials that include the child's name were kept in a secured location by the researcher.

3.14 Data Management and Confidentiality

The identities of all participants remained anonymous. All participants were assigned a code number and all data related to each participant were referenced by the assigned code number only. A code sheet was used to identify the medical records accessed and the code sheet remained with Dr. Klevzon, the designated primary investigator at the hospital in question. All data was stored using a secure, password protected, encrypted database and was kept in a secured location. Only the primary and co-investigators accessed the data.

CHAPTER IV

4 RESULTS

4.1 Introduction

This study, Phase 2, seeks to expand the original Phase 1 analysis. The data analyzed for this study includes previously collected data from that project in addition to the collection of new data to evaluate the effectiveness of the Collaborative Problem-Solving approach as a less restrictive behavioral intervention and to determine what variables, if any, impacted the use of locked seclusion.

This chapter describes the results of the Phase 2 data analysis, beginning with a descriptive presentation of the demographic characteristics of the participants and the study variables and measures used, followed by a discussion of the findings related to the research questions.

4.2 Research Questions

The following research questions were investigated for analysis:

- 1) *What were the variables significantly associated with a child being placed in locked seclusion?*
- 2) *Did children with histories of abuse evidence a significantly different rate of being placed in locked seclusion relative to admissions of children that did not involve histories of abuse within the context of the CPS intervention?*

4.3 Data Analysis

The following data analysis was conducted using the statistical software SPSS version 20.0. All study variables were presented descriptively (e.g., frequencies, means, etc.). A series of chi-square and *t*-test analyses were conducted to determine if the dependent variable (i.e., being placed in locked seclusion vs. not being placed in locked seclusion) was associated with any other study variables at a statistically significant level. Any study variables that were significantly associated with the dependent variable at the bivariate level were included in the multivariate logistic regression model explaining the outcome variable to control for their influences.

4.4 Sample Demographic Characteristics

The study was approved by the Duquesne University Institutional Review Board and the Institutional Review Board of the New York City hospital where the study was conducted. The study involved a retrospective closed medical record review of children, ages 5- 12, who had been hospitalized on the 15 bed inpatient child psychiatric unit during a nine-month period of July 1, 2006 – March 31, 2007.

The closed medical records reviewed for this time frame involved 197 admissions and 167 individual children. Demographic data were gathered regarding age, gender, and ethnicity.

Table 15

Demographic Data (n=197) between July 1, 2006 and March 31, 2007

Variable	n	n(%)
Age	197	$M = 9.28, SD=2.19$
Gender		
Male	127	64.5
Female	70	35.5
Ethnicity	195	
Black	86	44.1
Hispanic	83	42.5
White	14	7.2
Other	12	6.2

The ages of the children admitted during this time ranged from ages 5 to 12 years. The mean age of the children was 9.28 years with a $SD = 2.19$ years. Regarding gender, almost two-thirds of the patient population was male at 64.5% ($n=127$); 35.5% ($n=70$) was female.

Regarding ethnicity, there were four basic categories that emerged from the medical record review: Black, Hispanic, White, and Other Racial/Ethnic Identity. Two of the 197 medical records did not have race/ethnic information documented on the demographic admission form; therefore $n=195$. Of the 195 admissions, 44.1% ($n=86$) were Black; 42.5% ($n=83$) were Hispanic; 7.2% ($n=14$) were White; and 6.2% ($n=12$) were of an Other Racial/Ethnic Identity.

In reviewing the demographics, it appears that this study sample was largely represented by nine year old black males.

4.5 Descriptive Presentation of Study Variables, Measures, and Results

4.5.1 Admissions

Table 16 summarizes the number of admissions to the unit during the identified time frame. Of the 197 admissions, thirty were readmissions. Although the medical record numbers remained the same, new medical records were created for each child's readmission. As such, multiple admissions per child were counted as separate admissions and therefore analyzed accordingly. As is the case with a teaching hospital, the patient may have a new MD (resident) with each admission. The diagnoses, the demographic information such as age, and the clinical presentation requiring hospitalization may be different.

Admissions were coded by the date each child was admitted to the inpatient child psychiatric unit. Three time periods were evaluated: 1) July 1 – September 30, 2006; 2) October 1 – December 31, 2006; and 3) January 1 – March 31, 2007. These time periods were selected based on the introduction of the Collaborative Problem-Solving approach to the unit and the various stages of implementation.

Table 16

Admissions to Unit between July 1, 2006 and March 31, 2007

Variable	n	n%
July – September 2006	55	27.9
October – December 2006	77	39.1
January – March 2007	65	33.0

Of the total number, approximately one-quarter 27.9% ($n=55$) of admissions occurred between July 1, 2006 and September 30, 2006 (the period of baseline data collection where the Collaborative Problem-Solving Approach was not implemented),

while 39.1% ($n=77$) occurred between October 1, 2006 and December 31, 2006 (the period of staff orientation, training, and implementation of the CPS Approach); and 33.0% ($n=65$) occurred between January 1, 2007 and March 31, 2007 (the assessment of the CPS Approach as it pertained to frequency of locked seclusion use and whether the approach was successful in decreasing events with explosive and/or aggressive children).

4.5.2 Length of Stay

Length of stay was measured by placing each admission into one of nine categories: 1) 1 to 21 days; 2) 22 to 40 days; 3) 41 to 50 days; 4) 51 to 60 days; 5) 61 to 70 days; 6) 71 to 80 days; 7) 81 to 90 days; 8) 91 to 100 days; and 9) greater than 100 days.

The average length of stay was approximately 22 – 40 days ($M=1.39$ months, $SD=1.15$; Minimum/Maximum =1 day/9 months). The inpatient unit's targeted average length of stay for children was 21 days or less at that time. The results indicate the average length of stay was higher than what was projected and budgeted for. Anecdotally, this may have been caused by children in need of longer hospitalizations in order to stabilize symptoms or children waiting for placement to other institutions and/or alternate living arrangements.

4.5.3 Discharge Diagnoses

Data were gathered regarding the primary and secondary discharge diagnoses for all admissions.

There were 24 separate Axis I discharge diagnoses identified in the medical records. For simplicity in analyzing the data, these diagnoses were grouped into one of four categories related to Mood, Behavior, Psychosis, or Parent-Child Issues. Although

many diagnoses share common symptomatology and may be classified in the DSM-IV TR in one particular category, for the purposes of this study the predominant manifestation of symptoms or reason for hospitalization and course of treatment were used for category placement. This applies to diagnoses such as Obsessive-Compulsive Disorder that although diagnostically fall under the category of Anxiety Disorders, from a nursing perspective the symptoms that were managed in the therapeutic milieu were behavioral, requiring limit setting, redirection and some form of behavior modification.

Although medication management as prescribed by the psychiatrists are a key treatment component for most children on an inpatient unit, the physicians and social workers do not participate in the day-to-day management of the milieu, frequent rounding, observation, and limit setting of the children, nor do they routinely intervene and/or initiate crisis intervention. As such, the specific placement of certain diagnoses into one of the four categories was driven by the typical presentation of behaviors most often exhibited by children in the milieu and whether nurses intervened most often with 1:1 supportive staff interventions and assignments (typical for mood disorders) versus behavioral interventions and limit setting for overt, disruptive behaviors.

There were children who carried more than one Axis I discharge diagnosis (66%) and there were children with identified symptoms and issues that were grouped into more than one category. For example, a child carrying a primary discharge diagnosis of Mood Disorder Not Otherwise Specified and a secondary discharge diagnosis of Oppositional Defiant Disorder was classified in both Mood and Behavior categories. A single primary discharge diagnosis that shared symptoms from different categories such as Mood

Disorder with Psychotic Features was grouped in the Psychosis category as it best reflected the child's more acute condition in need of stabilization while hospitalized. Table 17 presents the primary and secondary discharge diagnoses and how each were categorized for the analysis.

Table 17 *Primary and Secondary Discharge Diagnoses by Category*

Category	Diagnosis
Mood Related	Post-Traumatic Stress Disorder
	Mood Disorder Not Otherwise Specified (NOS)
	Bipolar Disorder NOS
	Depressive Disorder NOS
	Separation Anxiety Disorder NOS
	Anxiety Disorder NOS
	Adjustment Disorder with Anxiety and Depression
	Major Depressive Disorder
Behavior Related	Oppositional Defiant Disorder
	Disruptive Behavior Disorder
	Attention Deficit Hyperactive Disorder
	Pyromania
	Adjustment Disorder
	Impulse Control Disorder
	Pervasive Developmental Disorder
	Adjustment Disorder with Mood/Conduct Features
	Conduct Disorder
	Intermittent Explosive Disorder
	Obsessive Compulsive Disorder
Psychosis Related	Psychotic Disorder NOS
	Mood Disorder with Psychotic Features
	Major Depressive Disorder with Psychotic Features
	Schizophrenia
Parent-Child Related	Parent-Child Relationship Problems

Table 18 presents the analysis of this data.

Table 18

Primary and Secondary Discharge Diagnoses of Children Admitted July 2006 – March 2007

Variable	n	n%
Primary Diagnosis	197	
Mood Related	93	47.2
Behavior Related	84	42.6
Psychosis Related	20	10.2
Secondary Diagnosis	131	
Mood Related	55	42.0
Behavior Related	56	42.8
Psychosis Related	10	7.6
Parent-Child Related	10	7.6

Of the 197 admissions, every child received a primary discharge diagnosis. The breakdown for all admissions was 47.2% ($n=93$) mood related; 42.6% ($n=84$) behavior related; and 10.2% ($n=20$) psychosis related. There were no children diagnosed with Parent-Child Relationship Problems as a primary discharge diagnosis.

Of the 197 admissions, there were 131 medical records with a documented secondary Axis I discharge diagnosis. The secondary discharge diagnosis was 42.0% ($n=55$) mood related; 42.8% ($n=56$) behavior related; 7.6% ($n=10$) psychosis related; and 7.6% ($n=10$) parent-child related.

The most prevalent diagnoses for children in need of inpatient treatment were mood and behavior related as compared to psychosis or parent-child related issues. The prevalence of these two diagnostic categories speaks to the challenge of behavior management for staff on an inpatient unit, a child's potential inability to self-regulate feelings and behaviors when angered or upset, and is relevant to staff's initiation of locked seclusion versus the CPS approach as interventions when explosive behaviors occurred.

4.5.4 History and Type of Abuse

Table 19 presents data regarding whether or not children admitted had a history of abuse.

Table 19

History of Abuse of All Children Admitted between July 1, 2006 and March 31, 2007

Variable	n	n%
History of Abuse	111	56.3
No History of Abuse	86	43.7

Of the 197 admissions, over half 56.3% ($n=111$) of the children had a documented history of abuse, while 43.7% did not have a history of abuse or have a history of abuse that was documented ($n=3$). There were three medical records out of the 86 that could not be substantiated for abuse or trauma as there was no response documented for the history of abuse question on the admission assessment form and the question was left blank. As part of the child's admission assessment, history of abuse was asked as a yes/no question. If answered "yes", the clinician was able to ask for more specific information and write a narrative, although additional or specific questions relating to abuse were not listed on the form. A child may not have acknowledged abuse when asked or the clinician may not have asked or documented the child's response on the form.

Table 20 indicates the type of the abuse that each child with histories of abuse experienced: *Physical, Sexual, Other, or Multiple Abuses*. For simplicity in the analysis, all forms of abuse that fell outside of physical or sexual abuse, such as medical, emotional, educational, or psychological neglect or maltreatment, witness to domestic violence or violent crime, and verbal abuse were categorized as "Other."

Table 20

Type of Abuse Experienced by Children Admitted between July1, 2006 and March 31, 2007

Variable	n	n%
No Abuse	86	43.7
Physical	34	17.2
Sexual	20	10.1
Other	21	10.7
Multiple	36	18.3

Of the 197 children admitted, 86 children (43.7) had no documented history of abuse or abuse that could be substantiated as the question was left blank (n=3); 34 children (17.2%) had a history of physical abuse; 20 children (10.1%) had a history of sexual abuse; 21 children (10.7%) had an “Other” form of abuse; and 36 children (18.3%) had a combination of multiple forms of abuse, including physical, sexual, or other forms of abuse or neglect. Of the 111 children with documented histories of abuse, the “multiple” category had the largest sample size, with physical abuse a close second. This finding indicates that most of the children with histories of abuse suffered multiple forms of abuse, not just a single act or type.

4.5.5 Locked Seclusion

Table 21 presents the data regarding the total number of admissions that had episodes of locked seclusion.

Table 21

Number of Admissions and Locked Seclusion between July 1, 2006 and March 31, 2007

Variable	n	n%
Locked Seclusion	23	11.7
No Locked Seclusion	174	88.3

Of the 197 admissions, there were 23 admissions (11.7%) that involved one or more episodes of locked seclusion. The remaining 174 admissions (88.3%) had no episodes of locked seclusion.

The 23 admissions were analyzed further to see how many locked seclusions occurred per admission. Of the 23 admissions, there were a total of 44 locked seclusions. Table 22 presents the breakdown of locked seclusion episodes per admission.

Table 22

Breakdown of Locked Seclusion Episodes per Admission - July 1, 2006 and March 31, 2007

Number of Admissions	Locked Seclusions Per Admission	Total of Locked Seclusions
14	1	14
4	2	8
2	3	6
2	5	10
1	6	6

The breakdown of locked seclusion episodes shows a wide variation of activity with several children being placed multiple times in locked seclusion. Of the 44 episodes of locked seclusion that occurred in 23 admissions, there were 19 children involved.

Table 23 presents the individual profiles of those children.

Table 23

Profiles of 19 Children Placed in Locked Seclusion – 23 Admissions, July 2006 – March 2007

Variable	n	n%
Age		
11 years	7	36.8
12 years	3	15.8
10 years	3	15.8
7 years	2	10.5
5 years	2	10.5
8 years	1	5.3
6 years	1	5.3
Gender		
Male	13	68.4
Female	6	31.6
Ethnicity		
Black	10	52.6
Hispanic	6	31.6
White	0	0.0
Other	3	15.8
Length of Stay (n=23 adms)		
<21 days	6	26.1
22-40 days	13	56.5
41-50 days	2	8.8
51-60 days	1	4.3
>100	1	4.3
Discharge Diagnoses (One or more documented)		
Behavior	18	94.7
Mood	17	89.4
Psychosis	3	15.8
History of Abuse		
History of Abuse	10	52.6
No History of Abuse	9	47.4
Unknown	0	0.0
Type of Abuse		
No Abuse	9	47.4
Physical	4	21.0
Multiple	3	15.8
Sexual	2	10.5
Other	1	5.3
Unknown	0	0.0

Of the 19 children, 36.8% (n=7) were 11 years old, the largest age group placed in locked seclusion; 15.8% (n=3) were 12 years old; 15.8% (n=3) were 10 years old; 10.5% (n=2) were 7 years old; 10.5% (n=2) were 5 years old; 5.3% (n=1) was 8 years old; and 5.3% (n=1) was 6 years old. Of note, there were no nine year old children placed in locked seclusion, the largest age group for the nine month study.

Males at 68.4% (n=13) were locked more than females at 31.6% (n=6) and Black children were locked more often than Hispanic (31.6%, n=6), White (0%) or Other (15.8%, n=3). No white children were locked; however, this ethnic population was represented by a very small number in the total study (7.2%).

Length of stay for these 23 admissions showed that six admissions (26.1%) had a length of stay <21 days; 13 admissions (56.5%) had a length of stay of 22-40 days; two admissions (8.8%) had a length of stay of 41-50 days; one admission (4.3%) had a length of stay of 51-60 days; and one admission (4.3%) had a length of stay >100 days.

Overall, the majority of children who were locked had a length of stay 22-40 days, consistent with the overall average length of stay findings of the study of 22 – 40 days ($M=1.39$ months, $SD=1.15$; Minimum/Maximum =1 day/9 months).

All 19 children had one or more documented primary and secondary discharge diagnoses. Most were Behavioral-related (94.7%, n=18) with Mood-related (89.4%, n=17) a close second. Only three children (15.8%) had a Psychosis-related diagnosis.

Ten children (52.6%) had a documented history of abuse; 9 children (47.4%) did not have histories of abuse. There were no children with unknown histories of abuse.

Concerning type of abuse, nine children (47.4%) had no history; four children (21.0%) were physically abused; three children (15.8%) experienced multiple types of

abuse; two children (10.5%) were sexually abused; and one child (5.3%) experienced abuse other than physical or sexual.

Of the 44 locked seclusions in the 23 admissions, there were children that were placed in one or more locked seclusions in one or more admissions. Table 24 represents the number of locked seclusions for each child per admission and history of abuse.

Table 24

Number of Children, Locked Seclusions per Admission, History of Abuse

Number of Children	Number of Admissions per Child	Number of Locked Seclusions per Admission/per Child	Total Number of Locked Seclusions	History of Abuse Yes/No
8	1	1 episode	8	Yes = 4; No = 4
2	1	2 episodes	4	Yes = 2; No = 0
2	1	3 episodes	6	Yes = 0; No = 2
3	2	1 episode in one of two admissions	3	Yes = 1; No = 2
1	2	5 episodes – 1 st 6 episodes – 2 nd	11	Yes
1	2	2 episodes – 1 st 5 episodes – 2 nd	7	No
1	2	1 episode – 1 st 2 episodes – 2 nd	3	Yes
1	2	1 episode – 1 st 1 episode – 2 nd	2	Yes

Of the 44 locked seclusions, eight of the 19 children (42.1%) were admitted once and had one episode of locked seclusion each, accounting for eight out of 44 locked seclusions (18.1%). Four of the children had histories of abuse; four did not.

Two of the 19 children (10.5%) were admitted once and had two locked seclusions each, accounting for four out of 44 locked seclusions (9%). Both children had histories of abuse.

Three of the 19 children (15.8%) had two admissions each (six admissions) but only one locked seclusion in one of their two admissions. This accounted for three out of 44 locked seclusions (7.0%). One child had a history of abuse, two children did not.

One child (5.3%) was admitted twice and had one locked seclusion in each admission, accounting for two out of 44 locked seclusions (4.5%). This child had a history of abuse.

Five out of the 19 children (26.3%) had three or more episodes of locked seclusion in one or more admissions. These children were the biggest contributors to locked seclusion episodes in the study, a total of 27 out of 44 locked seclusions (61.4%).

The biggest outlier was Child A who had 5 locked seclusions in the first admission (length of stay was 41 days) and six locked seclusions in the second admission (length of stay was 102 days), totaling 11 locked seclusions out of 44 (25%). This child was an 11 year old Black male with a history of abuse.

The second biggest outlier was Child B who had two locked seclusions in the first admission (length of stay 28 days) and five locked seclusions in the second admission (length of stay 34 days), totaling seven locked seclusions (15.9%). This child was an 11 year old Hispanic male with no history of abuse.

The remaining three children had three locked seclusions each. Child C and Child D were admitted once. Child C was a seven year old Hispanic male, no history of abuse and a length of stay of 17 days. Child D was a 12 year old Black female, no history of abuse and a length of stay of 25 days. Child E was admitted twice and had one locked seclusion in the first admission, two locked seclusions in the second admission. This child was a five year old Hispanic male, had a history of abuse and a length of stay of 14 days in the first admission, 12 days in the second.

In reviewing the analysis of the children placed in locked seclusion, the sample was largely represented by 11 year olds, mostly male, and Black. Ten of the 19 children had histories of abuse (52.6%), nine children did not (47.4%).

As a point of comparison to the total population for the study that was mostly represented by nine year old Black males, there were nine admissions involving eight children. All had primary discharge diagnoses for both Mood and Behavior, no Psychosis; Eight of the nine admissions had length of stays <21 days; one child had two admissions with his first admission >70 days. Three of the eight boys had histories of abuse; five did not. None of the children were placed in locked seclusion.

4.6 Research Question One

What were the variables significantly associated with a child being placed in locked seclusion?

4.6.1 Continuous and Categorical Variables – Impact on Locked Seclusion

A bivariate analysis was used to examine whether there was a relationship between any of the continuous independent variables of the study (age and length of stay), the categorical variables (history and type of abuse, gender, ethnicity, the date on

unit, primary and secondary discharge diagnoses) and being placed or not being placed in locked seclusion (dependent variable). This analysis was done in two parts: One analysis for the nine-month period that included 197 admissions and a second analysis for the three identified time periods for the CPS implementation. The analyses for the three periods were: July – September 2006, the baseline data collection stage where CPS was not implemented (n=55); October – December 2006 when staff were oriented, trained and the CPS approach was initiated (n=77); and January – March 2007 when CPS was fully implemented and assessment of its effectiveness occurred (n=65).

Tables 25 and 26 present the mean values, standard deviation, and t-test values for the continuous variables for the nine month period and three time frames respectively.

Table 25

Mean Values, Standard Deviation, and T-test Values Examining Continuous Study Variables by Being Placed and Not Being Placed in Locked Seclusion, July 2006 – March 2007 (n=197)

Variable	n	M(SD)	t(df)	p
Age			.25 (197)	.80
Locked Seclusion	23	9.39 (2.43)		
No Locked Seclusion	174	9.27 (2.16)		
Length of Stay			3.40 (197)	.001
Locked Seclusion	23	2.13 (1.60)		
No Locked Seclusion	174	1.29 (1.04)		

For the nine month period, the continuous variables of the study, age and length of stay, were analyzed in relation to their impact on a child being placed or not being placed in locked seclusion. Data indicated that admissions that involved locked seclusions did not differ by mean age, $t(197)=.25, p=.80$. Age was not a factor in whether a child was placed in locked seclusion or not. However, bivariate analysis did indicate that admissions that involved locked seclusions had a significantly longer length of stay ($M=2.13, SD=1.60$) relative to those that did not involve a locked seclusion ($M=1.29, SD=1.04$), $t(197)=3.40, p<.001$. Length of stay proved to be significant for the nine month period and suggested a relationship with increased locked seclusion use. Although statistically significant, length of stay should not be considered the sole predictor of being placed or not being placed in locked seclusion. There were many variables not measured or controlled, such as the unit's environment or staff working a particular shift that may have influenced a child's or staff's response and impacted the outcome.

Table 26

Mean Values, Standard Deviation, and T-test Values Examining Continuous Study Variables by Being Placed and Not Being Placed in Locked Seclusion by Time Period

Date on Unit	Variable	n	M(SD)	t(df)	p
July-Sept 2006 (n=55)	Age			-.75 (53)	.46
	Locked Seclusion	6	8.83 (2.93)		
	No Locked Seclusion	49	9.65 (2.49)		
	Length of Stay			.25 (53)	.81
	Locked Seclusion	6	2.00 (.63)		
	No Locked Seclusion	49	1.82 (1.81)		
Oct – Dec 2006 (n=77)	Age			1.08 (75)	.28
	Locked Seclusion	8	9.75 (2.19)		
	No Locked Seclusion	69	8.96 (1.94)		
	Length of Stay			5.64 (7.03)	.09
	Locked Seclusion	8	2.88 (2.53)		
	No Locked Seclusion	69	1.10 (.35)		
Jan – Mar 2007 (n=65)	Age			.16 (63)	.87
	Locked Seclusion	9	9.44 (2.51)		
	No Locked Seclusion	56	9.32 (2.10)		
	Length of Stay			4.93 (8.48)	.02
	Locked Seclusion	9	1.56 (.53)		
	No Locked Seclusion	56	1.05 (.23)		

The analysis for the three separate time frames had similar findings. Age was not a significant variable in any of the individual time frames. Length of stay did emerge as a significant variable but only during the third time frame of January –March 2007, the assessment of the CPS intervention: length of stay t (df) 4.93, $p=.02$. Length of stay was

not significant during July – September 2006 or October – December 2006 time frames. Again, one must consider this statistical significance within the context of other factors that may have impacted the outcome, variables unfortunately not measured or controlled during this study.

Table 27 presents the bivariate analysis examining the differences in categorical study variables and their impact on a child being placed or not being placed in locked seclusion for the nine month period (n=197). Tables 28, 29, and 30 present the analysis for the categorical variables for the three separate time frames.

Table 27

Bivariate Analysis Examining Differences in Categorical Study Variables by Being Placed and Not Being Placed in Locked Seclusion (n=197)

Variable	n	Locked Seclusion n (%)	No Locked Seclusion n (%)	X ²	p
History of Abuse				.00 (1)	.99
History	111	13 (11.7)	98 (88.3)		
No History	86	10 (11.6)	76 (88.4)		
Type of Abuse				2.33 (4)	.68
No Abuse	86	10 (11.6)	76 (88.4)		
Physical	34	3 (8.8)	31 (91.2)		
Sexual	20	3 (15.0)	17 (85.0)		
Other	21	1 (4.8)	20 (95.2)		
Multiple	36	6 (16.7)	30 (83.3)		
Gender				1.01 (1)	.34
Male	127	17 (13.4)	110 (86.6)		
Female	70	6 (8.6)	64 (91.4)		
Ethnicity (n=195)				4.64 (4)	.20
Hispanic	83	8 (9.6)	75 (90.4)		
Black	86	12 (14.0)	74 (86.0)		
White	14	0 (0.0)	14 (100.0)		
Other	12	3 (25.0)	9 (75.0)		
Date on Unit				.45 (2)	.80
7/1/06-9/30/06	55	6 (10.9)	49 (89.1)		
10/1/06-12/31/06	77	8 (10.4)	69 (89.6)		
1/1/07-3/31/07	65	9 (13.8)	56 (86.2)		
Primary Discharge Diagnosis				2.40 (2)	.30
Mood Related	93	9 (9.7)	84 (90.3)		
Behavior Related	84	13 (15.5)	71 (84.5)		
Psychosis Related	20	1 (5.0)	19 (95.0)		
Secondary Discharge Diagnosis	131			1.97 (3)	.58
Mood Related	55	8 (14.5)	47 (85.5)		
Behavior Related	56	8 (14.3)	48 (85.7)		
Psychosis Related	10	2 (20.0)	8 (80.0)		
Parent-Child Related	10	0 (0.0)	10 (100.0)		

Chi-square analysis for the nine month period (n=197) indicated that being placed in locked seclusion was not significantly associated with having a history of abuse, $X^2(1)=.00, p=.99$ or type of abuse, $X^2(4)=2.33, p=.68$. Additionally, the analysis showed that being placed in locked seclusion was not significantly associated with the other categorical variables: gender, $X^2(1)=1.01, p=.34$; ethnicity, $X^2(4)=4.64, p=.20$; date on the

unit, $X^2(2)=.45$, $p=.80$; primary discharge diagnosis, $X^2(2)=2.40$, $p=.30$; or secondary discharge diagnosis, $X^2(3)=1.97$, $p=.58$. For ethnicity, two medical records did not document ethnicity; therefore $n=195$. Three out of the 86 medical records could not be substantiated for history of abuse due to the absence of documentation.

Table 28

Bivariate Analysis Examining Differences in Categorical Study Variables by Being Placed and Not Being Placed in Locked Seclusion July 1 – September 30, 2006 (n=55)

Variable	n	Locked Seclusion n (%)	No Locked Seclusion n (%)	X ²	p
History of Abuse				1.99 (1)	.16
History	31	5 (16.1)	26 (83.9)		
No History	24	1 (4.2)	23 (95.8)		
Type of Abuse				3.82 (4)	.43
No Abuse	24	1 (4.2)	23 (95.8)		
Physical	8	1 (12.5)	7 (87.5)		
Sexual	6	1 (16.7)	5 (83.3)		
Other	4	0 (0.0)	4 (100.0)		
Multiple	13	3 (23.1)	10 (76.9)		
Gender				3.28 (1)	.07
Male	37	6 (16.2)	31 (83.8)		
Female	18	0 (0.0)	18 (100.0)		
Ethnicity (n=53)				4.64 (4)	.20
Hispanic	21	1 (4.8)	20 (92.5)		
Black	23	5 (21.7)	18 (78.3)		
White	6	0 (0.0)	6 (100.0)		
Other	3	0 (0.0)	3 (100.0)		
Primary Discharge Diagnosis				1.15 (2)	.56
Mood Related	23	2 (8.7)	21 (91.3)		
Behavior Related	27	4 (14.8)	23 (85.2)		
Psychosis Related	5	0 (0.0)	5 (100.0)		
Secondary Discharge Diagnosis (n=37)				.81 (2)	.67
Mood Related	16	2 (12.5)	14 (87.5)		
Behavior Related	18	3 (16.7)	15 (83.3)		
Psychosis Related	3	1 (33.3)	2 (66.7)		

Chi-square analysis for July-September 2006 ($n=55$) indicated there were no categorical variables significantly associated with being placed in locked seclusion:

history of abuse, $X^2(1)=1.99$, $p=.16$; type of abuse, $X^2(4)=3.82$, $p=.43$; gender,

$\chi^2(1)=3.28, p=.07$; primary discharge diagnosis, $\chi^2(2)=1.15, p=.56$; secondary discharge diagnosis ($n=37$), $\chi^2(2)=.81, p=.67$; and ethnicity ($n=53$), $\chi^2(4)=4.64, p=.20$. Of note: there were 37 medical records with a documented secondary discharge diagnosis; for ethnicity, two medical records did not document ethnicity.

Table 29

Bivariate Analysis Examining Differences in Categorical Study Variables by Being Placed and Not Being Placed in Locked Seclusion October 1 – December 31, 2006 (n=77)

Variable	n	Locked Seclusion n (%)	No Locked Seclusion n (%)	χ^2	p
History of Abuse				.16 (1)	.69
History	43	5 (11.6)	38 (88.4)		
No History	34	3 (8.8)	31 (91.2)		
Type of Abuse				2.22 (4)	.70
No Abuse	34	3 (8.8)	31 (91.2)		
Physical	14	1 (7.1)	13 (92.9)		
Sexual	8	2 (25.0)	6 (75.0)		
Other	13	1 (7.7)	12 (92.3)		
Multiple	8	1 (12.5)	7 (87.5)		
Gender				.31 (1)	.58
Male	51	6 (11.8)	45 (88.2)		
Female	26	2 (7.7)	24 (92.3)		
Ethnicity				1.26 (3)	.74
Hispanic	38	5 (13.2)	33 (86.8)		
Black	31	3 (9.7)	28 (90.3)		
White	4	0 (0.0)	4 (100.0)		
Other	4	0 (0.0)	4 (100.0)		
Primary Discharge Diagnosis				.89 (2)	.64
Mood Related	39	3 (7.7)	36 (92.3)		
Behavior Related	27	4 (14.8)	23 (85.2)		
Psychosis Related	11	1 (9.1)	10 (90.9)		
Secondary Discharge Diagnosis (n=47)				2.03 (3)	.57
Mood Related	20	4 (20.0)	16 (80.0)		
Behavior Related	18	3 (16.7)	15 (83.3)		
Psychosis Related	2	0 (0.0)	2 (100.0)		
Parent-Child Related	7	0 (0.0)	7 (100.0)		

Similar to the first time frame, the chi-square analysis for October – December 2006 ($n=77$) indicated there were no categorical variables significantly associated with being placed in locked seclusion: history of abuse, $\chi^2(1)=.16, p=.69$; type of abuse, $\chi^2(4)=2.22, p=.70$; gender, $\chi^2(1)=.31, p=.58$; ethnicity, $\chi^2(3)=1.26, p=.74$; or primary

discharge diagnosis, $X^2(2)=.89$, $p=.64$. There were 47 medical records with a documented secondary discharge diagnosis ($n=47$), $X^2(3) = 2.03$ $p=.57$, none of which were significant.

Table 30

Bivariate Analysis Examining Differences in Categorical Study Variables by Being Placed and Not Being Placed in Locked Seclusion January 1 – March 31, 2007 (n=65)

Variable	n	Locked Seclusion n (%)	No Locked Seclusion n (%)	X ²	p
History of Abuse				2.37 (1)	.12
History	37	3 (8.1)	34 (91.9)		
No History	28	6 (21.4)	22 (78.6)		
Type of Abuse				3.27 (4)	.51
No Abuse	28	6 (21.4)	22 (78.6)		
Physical	12	1 (8.3)	11 (91.7)		
Sexual	6	0 (0.0)	6 (100.0)		
Other	4	0 (0.0)	4 (100.0)		
Multiple	15	2 (13.3)	13 (86.7)		
Gender				.09 (1)	.77
Male	39	5 (12.8)	34 (87.2)		
Female	26	4 (15.4)	22 (84.6)		
Ethnicity				10.23 (3)	.02
Hispanic	24	2 (8.3)	22 (91.7)		
Black	32	4 (12.5)	28 (87.5)		
White	4	0 (0.0)	4 (100.0)		
Other	5	3 (60.0)	2 (40.0)		
Primary Discharge Diagnosis				.87 (2)	.65
Mood Related	31	4 (12.9)	27 (87.1)		
Behavior Related	30	5 (16.7)	25 (83.3)		
Psychosis Related	4	0 (0.0)	4 (100.0)		
Secondary Discharge Diagnosis (n=47)				.83 (3)	.84
Mood Related	19	2 (10.5)	17 (89.5)		
Behavior Related	20	2 (10.0)	18 (90.0)		
Psychosis Related	5	1 (20.0)	4 (80.0)		
Parent-Child Related	3	0 (0.0)	3 (100.0)		

The analysis of the categorical variables during the third time frame January – March 2007 indicated that ethnicity as a whole was the only categorical variable to emerge as significant, $X^2 (3)=10.23$, $p=.02$. This finding differed from all other time frames reviewed for categorical variables. The differences in the total population for each sub group Hispanic, Black, White, and Other did not produce a significant finding in two of the three periods, July – September and October – December 2006 ($n= 130$) nor was

ethnicity as a whole found to be significant for the nine month analysis that included January – March 2007 (n=195, as two medical records did not document ethnicity). For the third time frame, January – March 2007, the number of children in the Hispanic and Black sub groups were consistent with the numbers of children within those groups from previous time frames. There was very little difference or no difference in the number of children in the “White” and “Other” ethnicity sub groups across all time frames except for the one additional child in the “other” sub group during the January – March time frame where ethnicity was a significant finding.

Table 31

Ethnicity by Time Period

Variable	n
July-September 2006	
Hispanic	21
Black	23
White	6
Other	3
October-December 2006	
Hispanic	38
Black	31
White	4
Other	4
January-March 2007	
Hispanic	24
Black	32
White	4
Other	5

Additionally, when reviewing who was placed in locked seclusion, no children in either sub group “White” or “Other” were placed in locked seclusion during the first two periods. It was only in the third time period that three children in the “Other” sub group were locked and two were not. No white children were placed in locked seclusion. Table

32 presents sub groups “White” and “Other” and number of locked seclusions by time frame.

Table 32

Locked Seclusion by White or Other Ethnicity for Each Time Period (n=26)

Variable	n	Locked Seclusion n (%)	No Locked Seclusion n (%)
July – September , 2006 Ethnicity (n=9)			
White	6	0 (0.0)	6 (100.0)
Other	3	0 (0.0)	3 (100.0)
October – December 2006 Ethnicity (n=8)			
White	4	0 (0.0)	4 (100.0)
Other	4	0 (0.0)	4 (100.0)
January – March 2007 Ethnicity (n=9)			
White	4	0 (0.0)	4 (100.0)
Other	5	3 (60.0)	2 (40.0)

Of the 26 children within the “White” or “Other” sub groups, the difference between these two groups was very small as was the overall sample size of both groups across time frames relative to the Black and Hispanic sub groups. As a result, the finding that ethnicity was significant during the third time period was more likely a finding of chance and that any relationship between ethnicity and being placed in locked seclusion was unlikely.

With respect to the first research question as to whether there was a relationship between any of the continuous or categorical variables and being placed in locked seclusion, it can be concluded that two relationships emerged.

Length of stay was significant for the third time frame, January – March 2007 and suggested there was a relationship between a child having a longer length of stay and

being placed in locked seclusion (n=65 admissions) as well as for the nine month time frame of the study when all admissions were included (n=197). Although statistically significant, one must consider this significance within the context of other factors that may have impacted the outcome, variables unfortunately not measured or controlled during this study.

Ethnicity was significant but only for the third time period (n=65 admissions) and not for any other time frame reviewed. However, this finding seemed to be driven by one additional child in the “other” ethnicity sub group that happened to have an episode of locked seclusion during the January – March time frame. In all likelihood ethnicity was a significant finding of chance and was not a variable that impacted a child being placed in locked seclusion.

4.6.2 Research Question 2

Did children with histories of abuse evidence a significantly different rate of being placed in locked seclusion relative to admissions of children that did not involve histories of abuse within the context of the CPS intervention?

A logistic regression analysis was used in order to determine the outcome of being placed in locked seclusion (the dependent variable) within the context of the CPS intervention based on predictor variables. This analysis was done in two parts: one analysis for the nine-month period that included 197 admissions, and a second analysis for the third time frame January – March 2007 that involved 65 admissions as it was the only time period out of the three separate time periods where significant variables emerged. Both analyses included the variable “history of abuse.” Although not found to be a significant variable in any of the analyses conducted, it was included as the variable

of interest for this study to see whether a relationship emerged with locked seclusion when the other predictor variables were controlled.

The first analysis included the predictor variables length of stay (the statistically significant variable from the nine month analysis) and history of abuse (the variable of interest for this study). Table 33 presents that analysis.

Table 33

Logistic Regression Explaining Being Placed or Not Being Placed in Locked Seclusion by Study Variables, July 2006 – March 2007 (n=197)

Variable	B(SE)	Wald (X²)	Odds Ratio	95%CI	p
Length of Stay	.37 (.14)	7.08	1.45	1.10 -1.92	.01
History of Abuse	-.09 (.46)	.04	.85	.37-2.26	.85

Of the two predictor variables, length of stay and history of abuse, the results indicated when length of stay was controlled, admissions that involved children with histories of abuse were not significantly more likely to be placed in locked seclusion relative to admissions of children that did not involve a history of abuse (B=-.09, SE=.46, OR=.85, 95% CI=.37-2.26, $p=.85$). Although the probability went down for history of abuse and locked seclusion use when length of stay was controlled ($p=.99$ from the bivariate analysis to $p=.85$ in the logistic regression), history of abuse was still not a significant finding as it related to being placed or not being placed in locked seclusion. Given the increased predisposition of psychiatric and behavioral problems associated with abused or traumatized children, this finding suggests that these children may have had a positive and favorable response to the CPS intervention and somehow the CPS intervention normalized behaviors to that of their peer group – children without histories

of abuse. Behaviors, such as increased agitation, aggression or explosiveness that otherwise would have resulted in being placed in locked seclusion. However, without analyzing any other factors that may have occurred during the study that were not controlled or measured, this conclusion is mere speculation and the Collaborative Problem Solving approach cannot be attributed solely to that outcome based on the statistical relationship alone.

The second analysis used data from the third time period January – March 2007. The predictor variables used were length of stay (the significant variable from the third time period) and history of abuse (the variable of interest for the study). As ethnicity was most likely a significant finding of chance, it was omitted from this analysis. Table 34 presents that data.

Table 34

Logistic Regression Explaining Being Placed or Not Being Placed in Locked Seclusion by Study Variables for Date on Unit, January – March 2007 (n=65)

Variable	B(SE)	Wald (X²)	Odds Ratio	95%CI	p
Length of Stay	3.81 (1.91)	10.24	45.18	4.38-466.03	.001
History of Abuse	-2.05(1.14)	3.24	.128	.01-1.20	.07

In this analysis, when length of stay was controlled, history of abuse had an impressive statistical finding. Although results showed history of abuse was not completely significant with $p < .07$, this finding when reviewed with the odds ratio indicated that when length of stay was controlled as an influence, children with histories of abuse were less likely of being placed in locked seclusion than children without histories of abuse.

An odds ratio of 1 indicates that a condition or event under study is equally likely to occur in both groups. If the odds ratio is greater than 1, it indicates that the condition or event is more likely to occur in the first group (Field, 2009; Pallant, 2010). However, when the odds ratio is less than 1, as was the case in the second analysis with history of abuse $OR=.128$, it indicates that the condition or event is less likely to occur in the first group. The odds ratio must be nonnegative if it is defined (Field, 2009; Pallant, 2010).

For this second analysis, the odds ratio of .128 was converted to a positive number for easier interpretation by dividing 1 by .128 $=7.81$. The odds ratio of 7.81 indicates that children with histories of abuse were almost eight times less likely of being placed in locked seclusion than children without histories of abuse. This is a significant but cautionary effect size. Considering this finding occurred during the third time frame, the period when CPS was fully implemented and the assessment of the effectiveness of the CPS approach was done, this finding suggests that the Collaborative Problem Solving approach may have been effective in decreasing locked seclusion use, especially with children with histories of abuse, perhaps by giving the child an enhanced feeling of safety and trust with staff, of being heard, understood and respected while regaining a sense of control. However, as with all of the statistical relationships inferred from the analyses, these results must be taken at face value as other mitigating factors may have occurred during the study that were not controlled or measured. Although it is possible and more than likely that the CPS approach played a role in decreasing acting out behaviors, the extent to which CPS impacted children with histories of abuse and normalized their behaviors to that of their peer group, the children without histories of abuse remains

speculative and the CPS intervention cannot be attributed solely to that outcome based on the statistical relationships alone.

CHAPTER V

5 DISCUSSION AND CONCLUSION

5.1 Introduction

This retrospective quantitative study was designed to evaluate the effectiveness of the Collaborative Problem-Solving (CPS) approach as a less restrictive behavioral intervention on an inpatient child psychiatric unit with children ages 5-12 years and to determine what variables, if any impacted the use of locked seclusion before, during, after CPS implementation. It also explored whether children with histories of abuse were placed in locked seclusion at a significantly different rate relative to admissions of children that did not involve histories of abuse within the context of the CPS intervention.

The foundation for this study was a nine month performance improvement project from July 1, 2006 – March 31, 2007 that implemented the CPS approach with its inpatient child population (Phase 1). The impetus for that project was to explore less restrictive alternatives of de-escalation when children exhibited explosive or aggressive behaviors, and to reduce the frequency of locked seclusion, PRN medication use, security calls for assistance, and staff/patient injuries. The Phase 1 project was not statistically analyzed nor did it evaluate specific variables that may have increased or decreased the likelihood of being placed in locked seclusion. The intention of this retrospective study (Phase 2) was to expand the analysis of the Phase 1 project, reanalyze previously collected data, collect new data for analysis, and to determine whether there were variables that impacted locked seclusion use and specifically, whether children with

history of abuse were placed or not placed in locked seclusion at a rate different from children without histories of abuse during the three identified time frames of the study.

The following research questions were examined:

1. *What were the variables significantly associated with a child being placed in locked seclusion?*
2. *Did children with histories of abuse evidence a significantly different rate of being placed in locked seclusion relative to admissions of children that did not involve histories of abuse within the context of the CPS intervention?*

A summary of Phase 2 findings related to the research questions will be discussed within the context of the theoretical framework and the literature review, as well as limitations of the study, implications for nursing practice, and recommendations for future research.

5.2 Child Abuse, Erikson, and the Collaborative Problem – Solving Approach

Research strongly links early exposure of maltreatment to disruption in crucial normal stages of childhood development (Waite, et al., 2010) and children who have been sexually abused exhibit symptoms and behaviors that require mental health services (Mullers & Dowling, 2008). Children who have been severely maltreated may experience a wide range of psychosocial and psychiatric disorders with one or more co-morbidities (Haugaard, 2004) with long term effects of abuse that include but are not limited to attention deficit hyperactive disorder (ADHD), post-traumatic stress disorder (PTSD), withdrawal, sexualized behaviors, depression, violence, substance abuse, anxiety, bipolar disorder, suicidal ideation (Mullers & Dowling, 2008), criminality, persistently

dysfunctional lifestyles (Baren, et al., 2008a), and an increased risk of becoming perpetrators as adults (Jain, 1999). Maltreatment such as supervision neglect, physical neglect, physical assault, or contact sexual abuse have been associated with multiple adolescent health risks and high risk behaviors including but not limited to binge drinking, substance abuse, serious physical altercations, and altercations resulting in harm to others (Hussey, et al., 2006).

Erikson's theory of psychosocial development was the conceptual framework for this study. One of the chief concepts of Erikson's theory is the development of ego identity as it is the conscious sense of self developed through social interaction (Erikson, 1994b). Daily interactions with others, new experiences, and newly acquired information shape our ego identity, thus ego identity is ever changing across the lifespan. A sense of competence and mastery of skill also shapes and motivates behavior and actions. Each of the eight stages of Erikson's theory of psychosocial development focuses on mastery and successful competence in a particular area of life and represents a conflict that serves as a decisive moment in development for the individual. Conflicts and the manner in which they are resolved are catalysts for the success or failure of developing healthy ego identity and as such, the potential is high for both personal growth and failure (Erikson, 1993).

The first four psychosocial stages of Erikson's theory were the most pertinent to this study: Basic Trust vs. Mistrust; Autonomy vs. Shame and Doubt; Initiative vs. Guilt; and Industry vs. Inferiority. These stages emphasize the importance of healthy attachment, building trust, achieving autonomy, taking initiative, and finding purpose and the consequences if stages were not successfully mastered. A child's relative

understanding of the world is formed by the consistency and quality of the interactions experienced, starting with his parents from birth and progressing throughout life. If a child experiences dependable warmth, affection, consistent nurturing interactions, encouragement to take initiative, and acknowledgment of accomplishments and abilities, then the child develops trust, a sense of security and confidence, asserts more independence and control over the world, and demonstrates a greater sense of competence, leadership, and relating to others. (Child Development Institute, 2008; Cramer, et al., 1997; Erikson, 1994a; Niolon, 2000; Van Wagner, 2010a; Waters, 2007). In the absence of a secure environment when needs are not met and caregivers are inconsistent, emotionally unavailable, rejecting, critical, restrictive, neglectful or abusive, the child experiences anxiety, an inability to trust, heightened insecurities, develops an overwhelming fear of the world, paranoia, feels inadequate, defeated, becomes overly dependent, frustrated, develops low self-esteem, experiences extreme shame and doubt over their abilities, isolates, and experiences feelings of inferiority (Child Development Institute, 2008; Cramer, et al., 1997; Erikson, 1994a; Niolon, 2000; Van Wagner, 2010a; Waters, 2007).

The Collaborative Problem-Solving Approach was developed specifically with the explosive child in mind. Tantrums, defiance, severe resistance, verbal and physical aggression are behaviors that explosive children may present, possibly resulting from years of neglect or abuse. Unlike other behavioral management systems, the CPS approach offers a reconceptualization of explosive behaviors and their underlying causes starting with the premise that “children do well if they can” not “children do well if they want to” (Greene, 2005). The CPS model emphasizes development and cognition and

how a child's deficits may contribute to a child's noncompliance, low frustration, and explosiveness. As such, explosive behaviors are seen as learning deficits, not willful deliberate acts of defiance (Greene & Ablon, 2006). The approach engages the child in working toward mutually satisfactory resolutions to problems in a collaborative, support way between child and adult by identifying and articulating the problem to be solved, any associated concerns, the possible solutions and likely outcomes, and whether outcomes are feasible and will be mutually satisfying (Greene & Ablon, 2006). If Erikson's theory is correct, that conflicts and the manner in which they are resolved are catalysts for the success or failure of developing healthy ego identity (Erikson, 1993), then one can assert that the CPS model serves as the nurturing adult or caring parent that the explosive child may not have had in the past. Erikson's theory provides greater understanding of a child's psychosocial development and the Collaborative Problem Solving approach assists and gives the adult necessary skills in teaching the child adaptive coping skills, self-regulation of emotions, and behavioral control in a collaborative, supportive way. Erikson's theory and the CPS model are complimentary approaches to care and ultimately, the CPS approach becomes the corrective experience for the child. The results of the study as they relate to locked seclusion use seem to support this assertion with children who have histories of abuse.

5.3 Demographic Findings

The closed medical record review included 197 admissions involving 167 children. The demographic characteristics of the children admitted between July 1, 2006 and March 31, 2007 were comparable with some of the demographics found in other studies involving children hospitalized for psychiatric and/or behavioral problems. The

majority of children admitted were male, a consistent finding with studies from the literature review. Mean age for this study was approximately 9.2 years. Most of the studies reviewed had age ranges wider than this study's range of 5-12 years; therefore mean age between studies was variable. The largest study reviewed, a five year prospective study at Yale-New Haven Children's Hospital that reviewed seclusion and restraint reduction through Collaborative Problem Solving (Martin, et al., 2008) had a median age of 11 years; the sample size, however, was considerably larger (755 children) with an age range of three to 15.

Regarding ethnicity, there were four major categories that emerged from the medical record review: Black, Hispanic, White and Other. Two of the 197 medical records did not document race/ethnicity. The majority of children in this study sample were Black, with Hispanic a close second. White and "Other" children made up a very small percentage of the total population, a finding not surprising for an urban New York City hospital. This finding, however was inconsistent with the majority of studies reviewed as White was identified as the predominant race followed by Black, Hispanic and Other. The studies identified type of unit or hospital such as "teaching versus community" or "rural versus urban" but not necessarily by geographic location. Presumably this may have influenced the ethnic composition of the patient population in those studies.

5.4 Study Variables and Findings

5.4.1 Admissions

Admissions were divided into three distinct time frames, based on the introduction of the Collaborative Problem-Solving (CPS) approach to the unit and the

various stages of implementation. During baseline data collection before CPS was implemented (July 1 – September 30, 2006), there were 55 admissions to the child unit. During the orientation, staff training, and CPS initiation, there were 77 admissions. During full implementation and assessment of the CPS approach (January 1 – March 31, 2007), there were 65 admissions. Of the 197 admissions during the nine-month period, thirty children were readmitted. Although the medical record numbers remained the same for each child readmitted, new medical records were created and as such, subsequent admissions per child were counted as separate admissions and analyzed accordingly. This finding was consistent with most studies that reported child readmissions as a statistic and consistent with the literature that frequent readmissions are common for children with acute psychiatric or behavioral symptoms or conditions.

5.4.2 Length of Stay

The average length of stay for the children on the unit was approximately 22 – 40 days. This finding was comparable to the five year Yale-New Haven study conducted during the same time period (Martin, et al., 2008). However, this finding was greater than the average length of stay that the unit projected and budgeted for, which was 21 days or less.

Anecdotally, length of stay as it relates to increased locked seclusion use was an interesting finding as for many years extended lengths of stay for inpatient hospitalizations were the norm and considered advantageous in stabilizing children with acute symptomatology. Very few children were discharged within 21 days or less which allowed clinicians to observe behaviors over time, adjust medications as needed, identify post discharge issues, and create a comprehensive discharge plan with follow-up. For the

children, the extended time created safety and trust with staff and a level of predictability and consistency in their day to day life. With decreased lengths of stay now the norm for the majority of children, the increased turnover of admissions creates a less predictable environment for children who remain longer. An extended length of stay for a child who witnesses others leaving sooner has more difficulty adapting to change, experiences loss of friendships, and frustration and anger over their situation. The longer children experience these feelings, the greater the potential for acting out in explosive or aggressive ways.

For this study, this finding may have resulted from a variety of conditions, from children who were not stable for discharge within the targeted time frame to children waiting for placement to a residential treatment facility or alternate living situation.

Shorter lengths of stay have been the trend over the past few years and there has been a significant decline of inpatient care with children and adolescents (Glier & Cuellar, 2003). National spending on inpatient care has declined for children and instead of serving as a treatment modality for stabilization, inpatient psychiatric hospitalizations now serve as crisis care, discharging seriously ill children back into the community for follow-up (Glier & Cuellar, 2003). This phenomenon has created a new pattern of treatment for children, with an increased use of medication treatment provided through the medical system. With limited specialized resources, such as child psychiatrists or inpatient child psychiatric beds, there are now gaps in outpatient services (Glier & Cuellar, 2003). This may account for the recidivism and readmission of children to acute care facilities as community-based resources are not adequate to accommodate supply and demand of child psychiatric care.

5.4.3 Primary and Secondary Discharge Diagnoses

There were 24 separate Axis I diagnoses identified in the medical records that were grouped into one of four categories for simplicity: Mood, Behavior, Psychosis, or Parent-Child Issues. Although many diagnoses share common symptomatology and may be classified in the DSM-IV TR in one particular category, it should be noted that for the purposes of this study, the predominant manifestation of symptoms or reason for hospitalization and course of treatment were used for category placement. Of the 197 admissions, the majority of children carried a primary discharge diagnosis that was mood related, followed by a diagnosis that was behavior related. There were children who carried more than one Axis I discharge diagnosis and there were children with identified symptoms and issues that were grouped into more than one category. When a child carried a primary discharge diagnosis that was mood related and a secondary discharge diagnosis that was behavior related, those diagnoses were classified in both Mood and Behavior categories. A single primary discharge diagnosis that shared symptoms from different categories was grouped in the category that best reflected the child's more acute condition in need of stabilization while hospitalized. Of the 197 admissions, there were 131 medical records with a documented secondary discharge diagnosis. These children carried a secondary discharge diagnosis that was behavior related with mood related diagnoses almost equally represented.

The prevalence of mood and/or behavior related diagnoses were consistent with the literature, especially with the Yale-New Haven five year prospective study that evaluated the reduction of restraint and seclusion use through Collaborative Problem-Solving. Although the primary diagnostic composition changed over the five year period

(n=755), all the children carried either a mood and/or behavioral diagnosis (Martin, et al., 2008). The prevalence of these two diagnostic categories speaks to the challenge of behavior management for staff working with such children on an inpatient unit and is relevant to the interventions staff select when a child exhibits explosive or aggressive behaviors when angered or upset. In the case of this study, the specific interventions of interest included the use of locked seclusion as the most restrictive intervention versus less restrictive interventions framed within the context of the CPS approach.

Psychotic disorders were not prevalent in the study, either as a primary or secondary discharge diagnosis, a finding consistent with the literature reviewed. No children carried a parent-child related primary discharge diagnosis; however, a small percentage carried that issue as a secondary discharge diagnosis.

5.4.4 History and Type of Abuse

As part of the child's admission assessment, history of abuse was asked as a yes/no question, as listed on the admission form. If answered "yes" the clinician was able to ask for more specific information, although additional or specific questions relating to abuse were not listed on the form. Of the 197 admissions, 111 children had documented histories of abuse while 86 children had no history of abuse or had histories that were unknown (n=3). Three of the 86 medical records could not be substantiated for abuse or trauma as there was no response documented for the history of abuse question on the admission assessment form and the question was left blank. This may have occurred when a child did not answer or acknowledge an abuse history when asked, the clinician admitting the child neglected to ask the yes/no question on history of abuse, or neglected to document the child's response, leaving the question blank.

The most prevalent types of abuse recorded were either Physical or Sexual. For simplicity in the analysis as there were too many variations of abuse or neglect to differentiate, all forms of abuse that fell outside of physical or sexual abuse, such as medical, emotional, educational, or psychological neglect or maltreatment, witness to domestic violence or violent crime, or verbal abuse were categorized as “Other.” For children who experienced more than one type of abuse, they were categorized as “Multiple Abuses.”

The “multiple” category had the largest sample size, with physical abuse a close second. This finding indicates that most of the children with histories of abuse suffered multiple forms of abuse, not just a single act or type.

Some of the research articles reviewed did not include abuse or trauma as a variable in their studies. Of the articles that did report abuse or trauma as a variable, physical abuse was cited as the most prevalent. Some articles cited “Maltreatment” or “No Maltreatment” as a finding but did not differentiate between types.

5.4.5 Locked Seclusion

Of the 197 admissions between July 1, 2006 and March 31, 2007, there were 23 admissions that accounted for 44 locked seclusions and 174 admissions that had no episodes of locked seclusion. The breakdown of locked seclusion episodes per child, per admission showed a wide variation with several children being placed multiple times in locked seclusion.

Overall, there were 19 children that accounted for the 44 locked seclusions. There were 14 children that accounted for 17 of the 44 locked seclusions, whereas five children accounted for 27 of the 44 locked seclusions.

The sample was largely represented by 11 year olds, mostly male, and Black. Ten of the 19 children had histories of abuse (52.6%), nine children did not (47.4%).

Of the five children that accounted for the 27 locked seclusions, two children had abuse histories, three children did not.

The child with the most locked seclusions (n=11) had five in his first admission and six in his second admission. This was an 11 year old Black male, had a history of abuse, and a length of stay of 41 days in the first admission and the longest length of stay in the study of 102 days in his second admission.

The second child had two locked seclusions in the first admission (length of stay 28 days) and five locked seclusions in the second admission (length of stay 34 days), totaling seven locked seclusions. This child was an 11 year old Hispanic male and did not have a history of abuse.

The remaining three children had three locked seclusions each. Two of the children were admitted once. One child was a seven year old Hispanic male, no history of abuse and a length of stay of 17 days. The other child was a 12 year old Black female, no history of abuse and a length of stay of 25 days. The third child was admitted twice, had one locked seclusion in the first admission and two locked seclusions in the second admission. This child was a five year old Hispanic male, had a history of abuse and lengths of stay of 14 days and 12 days respectively.

Of the total population for the study that was mostly represented by nine year old Black males, there were nine admissions involving eight children. All had primary discharge diagnoses for Mood and Behavior, no Psychosis; eight of the nine admissions had length of stays <21 days; one child had two admissions with his first admission >70

days. Three of the eight boys had histories of abuse; five did not. None of the children were placed in locked seclusion.

The findings from the study were consistent with the literature that aggressive, explosive, or some form of dysregulation were the most common causes for locked seclusion use, although additional factors were listed in studies that were not measured in this study, such as children exhibiting self-injurious behaviors or change of shift for staff that increased stimulation and activity on the unit (K. Delaney & Fogg, 2005).

5.5 Research Question 1 – Discussion of the Findings

Research Question 1: What were the variables significantly associated with a child being placed in locked seclusion?

A bivariate analysis was used to examine whether there was a relationship between any of the continuous independent variables of the study (age and length of stay), the categorical variables (history and type of abuse, gender, ethnicity, the date on unit, primary and secondary discharge diagnoses) and being placed or not being placed in locked seclusion (dependent variable). This analysis was done in two parts: One analysis for the nine-month period that included 197 admissions and a second analysis for the three identified time periods of the CPS implementation. Two relationships emerged from these analyses.

Of the continuous variables age and length of stay, age was not significant as to whether a child was placed in locked seclusion or not for any time period reviewed. Length of stay was significant during the third time period, January – March 2007 when assessment of the CPS intervention occurred, suggesting there was a relationship between a child having a longer length of stay and being placed in locked seclusion (n=65

admissions). Length of stay was also significant during the nine month time frame of the study when all admissions were included (n=197). Although statistically significant, one must consider this significance within the context of other factors that may have impacted the outcome, variables unfortunately not measured or controlled during this study. As such, length of stay cannot be considered as the only or most prominent reason for a child being placed in locked seclusion.

All of the categorical variables were analyzed in a similar manner, using a bivariate analysis to examine potential relationships and their impact on a child being placed or not being placed in locked seclusion for the nine month period and for the three separate time periods.

Chi-square analysis for the nine month period (n=197) indicated there were no categorical variables significantly associated with being placed in locked seclusion, including history of abuse, type of abuse, gender, ethnicity, date on the unit, primary or secondary discharge diagnosis, or ethnicity. Of note, there were 131 medical records that documented secondary discharge diagnosis. For ethnicity, two medical records did not document ethnicity, therefore n=195.

For the three separate times periods, chi-square analysis indicated there were no categorical variables significantly associated with being placed in locked seclusion for two of the three time periods, July – September 2006 and October – December 2006 respectively. The analysis for the third time period of January – March 2007 indicated that ethnicity emerged as significant, a finding that differed from all other time periods reviewed for categorical variables. Ethnicity was not a significant finding in two of the

three separate time frames reviewed nor was it a significant finding in the nine month analysis that included the 195 medical records that documented ethnicity.

There was very little difference or no difference in the number of children in the “White” and “Other” ethnicity subcategories across time frames except for the one additional child in the “other” subcategory during the January – March time frame. When reviewing who was placed in locked seclusion, no children in either subcategory were locked during the first two time periods. It was only in the third time period of January – March 2007 that three children in the “other” subcategory were locked and two were not. No white children were placed in locked seclusion. Of the 26 children within the “White” or “Other” subcategories, the difference between these two groups was very small as was the overall sample size of both groups across time frames relative to the Black and Hispanic subcategories. As a result, the finding that ethnicity was significant during the third time period was more likely a finding of chance and that any relationship between ethnicity and being placed in locked seclusion was unlikely.

5.6 Research Question 2 – Discussion of the Findings

Did children with histories of abuse evidence a significantly different rate of being placed in locked seclusion relative to admissions of children that did not involve histories of abuse within the context of the CPS intervention?

Based on the predictor variables that emerged from the bivariate analysis of Research Question 1, a logistic regression analysis was used in order to determine the outcome of being placed in locked seclusion (the dependent variable) within the context of the CPS intervention. This analysis was also conducted in two parts: one analysis for the nine-month period that included 197 admissions, and a second analysis for the third

time frame January – March 2007 (n=65 admissions) as this was the only time frame of the three where significant variables emerged.

Both logistic regression analyses included the variable “history of abuse.” Although not found to be a significant variable in any of the bivariate analyses conducted, it was included as the variable of interest for this study to see whether a relationship emerged with locked seclusion when the other predictor variables were controlled.

The first analysis for the nine month period included the predictor variables length of stay (the significant variable from the bivariate analysis) and history of abuse (the variable of interest for this study). Of these two predictor variables, the results suggested there was a relationship between length of stay and being placed in locked seclusion. When length of stay was controlled, the results showed that children with histories of abuse were not significantly more likely to be placed in locked seclusion relative to admissions of children that did not have histories of abuse. Given the increased predisposition of psychiatric and behavioral problems associated with abused or traumatized children, this finding suggests that these children may have had a positive and favorable response to the CPS intervention and somehow the CPS intervention normalized behaviors to that of their peer group – children without histories of abuse. Behaviors, such as increased agitation, aggression or explosiveness that otherwise would have resulted in being placed in locked seclusion. However, without analyzing other factors that may have occurred during the study that were not controlled or measured, this conclusion is mere speculation and the Collaborative Problem Solving approach cannot be attributed solely to that outcome based on the statistical relationship alone.

The second analysis used data from the third time period January – March 2007. The predictor variables used were length of stay (the significant variable from the third time period) and history of abuse (the variable of interest for the study). As ethnicity was most likely a significant finding of chance, it was omitted from this analysis. Length of stay remained statistically significant and associated with being placed in locked seclusion. History of abuse, although not completely significant with $p < .07$, had an impressive finding when length of stay was controlled as an influence. The results showed that children with histories of abuse were less likely of being placed in locked seclusion than children without histories of abuse. As the odds ratio was less than 1, this finding suggested that the condition or event (in this case being placed in locked seclusion) was less likely to occur in the first group. The odds ratio of .128 when converted to a positive number (7.81) for easier interpretation, indicated that children with histories of abuse were almost eight times less likely of being placed in locked seclusion than children without abuse.

This effect size and interpretation, although noteworthy, must be considered with caution. This finding occurred during the third time frame, the period when CPS was fully implemented and the assessment of the effectiveness of the CPS approach was evaluated. At face value, this finding suggests that the Collaborative Problem Solving approach may have been effective in decreasing locked seclusion use, especially with children with histories of abuse, perhaps by giving the child an enhanced feeling of safety and trust with staff, of being heard, understood and respected while regaining a sense of control. This is a logical and intuitive interpretation; however it is based solely on the statistical result and an understanding of the CPS model. As the CPS approach could not

be measured in and of itself, other potential influences not measured or controlled must be considered that may have impacted this outcome.

As abused children are at a higher risk for increased psychiatric disorders and behavioral dysregulation (Baren, et al., 2008a; Hussey, et al., 2006; Kazdin, et al., 1985; Mullers & Dowling, 2008), it would be an important treatment finding if the CPS approach proved successful in preventing and/or decreasing the use of locked seclusion during a crisis, perhaps due to a renewed sense of control and feeling safe with staff. The outcomes of this study seem to indicate that the CPS approach was beneficial and successful in decreasing locked seclusion use with abused children and that the introduction of the CPS approach as an intervention favorably altered the unit's environment to the extent that it allowed the at-risk group of children, namely the children with abuse histories, an opportunity to discuss feelings and choices with staff in a healthier way and participate in the decision of how best to calm down in a crisis. By feeling supported by staff with choices that promoted respect, dignity, and an element of control in the outcome when upset or angered, the CPS approach may have served as a proactive, rather than reactive approach to de-escalating behaviors. However, as with all of the statistical relationships inferred from the analyses conducted in this study, these results must be considered within the context of other mitigating factors, such as environment, change in treatment providers, census, or other activities or events that were not controlled or measured. Although it is possible and more than likely that the CPS approach played a role in decreasing acting out behaviors, the extent that CPS impacted children with histories of abuse and normalized their behaviors to that of their peer group,

the children without histories of abuse remains speculative and the CPS intervention cannot be attributed solely to that outcome based on the statistical relationships alone.

5.7 Limitations of the Study

There were many limitations that may have affected the generalizability of the findings of this Phase 2 study, beginning with the original performance improvement project (Phase 1) and the manner in which it was structured for data collection and analysis and staff training. Although all staff who participated agreed there was a need to actively address the increased patient acuity and subsequent aggressive episodes with more therapeutic, less restrictive approaches to care, not all embraced the challenges that occurred throughout the project.

There was reluctance by a few senior RNs to adopt the new CPS approach due to its labor-intensity and their own fears of change. The differences in formal education and clinical skill between licensed and non-licensed staff created inconsistencies in implementing the CPS approach, although the non-licensed staff were eager to change to a new approach even with limited skills and support to do so.

Only dayshift child staff received training. This limitation, unbeknownst to us when we set up the parameters of the PI project, ultimately had a negative effect on the unit and staff. As training progressed with the dayshift child staff, some of the staff not involved in the training (specifically adolescent staff from all three shifts or child staff from the evening and night shifts) felt left out and verbalized dissatisfaction and frustration regarding not being involved or given new skills or opportunity to effect change.

The disparities between the CPS model and our traditional limit setting and interventions became especially evident when child staff, trained or not trained, worked a different shift from the one they were permanently hired for. Based on the increased use of locked seclusions throughout the 9-month period, it could be hypothesized that obvious inconsistencies between approaches to care created a negative, stressful, and perhaps mistrustful environment for the children when staff worked a different shift. As a result, these inconsistencies inadvertently increased the unit's acuity, causing the children who were in tenuous control at best to become more explosive and aggressive, thus increasing the use of locked seclusion. Children accustomed to a more collaborative interaction with trained day staff when emotionally upset may have negatively reacted to the traditional approaches of time outs, bedroom restrictions, and suspended privileges utilized with the non-trained staff. When trained day staff worked an extra evening shift, this individual was in the minority while working with non-trained staff that continued to utilize the unit's established behavior modification program and interventions. Trained staff may have attempted to provide a more collaborative approach with children experiencing distress; however in the absence of a team approach that utilized the CPS model, it would have been very challenging to implement and sustain as the only staff member utilizing that approach in a crisis. As much as non-trained staff may have negatively impacted the collaborative day shift environment, it is likely that trained staff working another shift with non-trained staff may have negatively influenced the environment as well, creating for the child the perception that the unit was unpredictable and unsafe. In the absence of a cohesive team approach in containing escalating behaviors, locked seclusion may have been the only recourse to a child's explosive

episode. Had we the resources and time to devote to a larger, more substantial “make over” of the child psychiatric unit, all three shifts would have been trained to implement the CPS approach for consistency which would have strengthened the implementation of the CPS model.

Clinical leadership was not sufficiently available to supervise daily interactions between patients and staff in an ongoing and consistent manner. Supervision often occurred after the fact, not in real-time when it would have been most beneficial to discuss interventions with aggressive patients immediately after they occurred.

Administrative pressures, such as decreased length of stay, need to maintain patient volumes, and admission criteria from insurance companies that limited our admissions to the most acute cases impeded the clinicians’ ability to perform comprehensive assessments and develop individualized plans as the CPS model dictated. We lacked professional staff resources and time. As compared to other units, such as Yale New Haven Hospital and Cambridge Hospital where CPS was successfully implemented, our inpatient unit was larger with a higher census, more admissions, and fewer licensed professional staff providing care such as social workers and psychologists.

The collection of data where there was no differentiation between the child and adolescent populations negatively skewed the analysis of PRN medication use and patient and staff injuries. Although it was not clear why this occurred, it could be attributed to miscommunication by unit leadership with the psychiatric residents or a misunderstanding by the residents as to what and how the data should have been collected.

The collection of data regarding history of abuse was not part of the original study and therefore did not have a negative impact on the Phase 1 analysis. However, for Phase 2 where history of abuse was the variable of interest, documentation was incomplete for three medical records. For future research, it would be important for clinicians to thoroughly assess children for abuse and trauma histories and to make sure all documentation is complete. In the absence of documentation for histories or type of abuse, a separate category for “unknown abuse” should be created and analyzed separately.

Other limitations that may have impacted the results of the study included the limitation of one geographic location for data collection. The population used for the study was a small convenience sample of children admitted to one inpatient unit. Although we could not control who was admitted, many of the children were well-known to staff from past admissions. This familiarity may have skewed the findings as any pre-existing biases, positive or negative, or counter-transferences on the part of the staff toward the child would have influenced how staff interacted with them or in the selection of interventions when setting limits. Extending the study to other inpatient child psychiatric units, both in close proximity to each other as well as expanding to other geographic regions would allow for greater cultural diversity, regional differences, and larger sample sizes in order to test the validity of the CPS approach in decreasing locked seclusion use.

The environmental challenges must be considered as potential limitations to the study as these were variables outside of staff’s control: daily census, unit acuity, new admissions that diverted staff’s availability in the milieu, other children that required

increased staff time and attention due to individual need, visiting time with parents or legal guardians that may have caused increased emotional responses from children during those visits, staffing patterns and skill mix for the shift, staff off the unit for a meal break, and a host of other undocumented variables. These unit conditions regardless of shift and staff training may have escalated behaviors in more than one child causing a more chaotic experience. As a result of any of the scenarios described above, there may have been more than one child impacted by environmental stress and highly possible that staff provided multiple interventions to multiple children during a time of heightened activity or stress to prevent and curtail aggressive or explosive behaviors and maintain safety, all of which were successful except for the one child that required the most restrictive intervention. Conversely, there may not have been enough staff to intervene during a crisis and locked seclusion was the only recourse to minimize risk and injury. The data collected did not document milieu/environmental factors that may have contributed to a child being placed in locked seclusion. In the absence of this data, it would be unreasonable to assume that environment did not contribute or influence the use of locked seclusion.

The inherent connection the researcher had to the inpatient program as the Clinical Nurse Manager during the Phase 1 performance improvement project could be considered a limitation and perceived as a bias to the process. However, it could also be viewed as a catalyst for implementing future quality improvement initiatives and services based on the outcomes of the study. This researcher left the manager position to work as a director in another department in the hospital in February 2008 and therefore did not continue working with the staff or patients on this inpatient child psychiatric unit.

Finally, Phase 1 of the PI project was not set up as a true research study. We were interested in a quick fix and recognized that a formal study would require more time and resources than we had at our disposal. In hindsight, the data collection should have been more structured with clearer guidelines to the psychiatric residents regarding the focus on child psychiatry only and the specific variables of interest. However, I do believe for the areas that concerned us most, specifically the use of locked seclusion, Phase 1 provided us with valuable data that supported the implementation of the CPS model.

5.8 Significance of the Study to Nursing

According to Greene and Ablon (2006), the cognitive foundation of the Collaborative Problem-Solving approach as it relates to maladaptive behaviors can assist staff in gaining greater insight into those behaviors. The emphasis on identifying triggers for each child and developing individualized plans of care based on those triggers can assist staff with more effective communication about assessment information, including histories of abuse. In addition, collaboration and coordination of interventions that all staff, licensed and non-licensed can implement is an important aspect of the model as it strengthens the treatment team and allows all staff an opportunity to contribute to the care of the patient (Greene & Ablon, 2006).

Psychiatric nurses in an inpatient setting are direct caregivers to patients, manage the therapeutic milieu and crisis situations with prevention and intervention, are advocates of patient rights, and mediators and educators of families. According to Hildegard Peplau, psychodynamic nursing is the ability to understand one's own behavior, to help others identify felt difficulties, and to apply principles of human relations to the problems that arise at all levels of experience (Peplau, 1952). The nurse

assists the patient in recognizing and understanding the problem(s) at hand and determine the patient's need for help (Howk, 2002). The Collaborative Problem-Solving approach is a treatment model that thoroughly supports and is compatible with the psychiatric nursing process and all of the essential responsibilities associated with safe and therapeutic patient care.

“When a nurse permits patients to express what they feel, and still get all of the nursing that is needed, then patients can undergo illness as an experience that reorients feelings and strengthens positive forces in personality” (Peplau, 1952, p. 31). This process, as described by Peplau is especially important for children who have been abused or traumatized and resonates with the tenets of Erikson's theory of psychosocial development. The psychiatric nurse assumes the role of the Resource Person by providing specific information and answers to questions, especially related to health information and interpretation of treatment and plan of care (Peplau, 1952).

Staff responses to children who are hospitalized with histories of abuse are an important consideration when assessing the effectiveness of any treatment modality. Effective care begins when it is individualized to the needs of the child. Individualized care begins with staff asking the necessary questions pertinent to histories of abuse and neglect, then incorporating that information in the treatment identified as most appropriate for that patient (Read & Fraser, 1998).

It has been suggested that altering how limits are set on an inpatient unit may directly influence the reduction of using locked seclusions and restraints. According to the literature, there is evidence to support that certain styles of redirection and limit setting by staff precipitates increased assaults by patients (Ryan, et al., 2004). Due to the

prevalence of psychiatric and behavioral disturbances that occur with abused and maltreated children, it is imperative that treatment interventions remain therapeutic and not re-traumatize the child when limit setting becomes necessary.

The Collaborate Problem-Solving approach and Greene and Ablon's attempt to re-conceptualize non-compliant explosive behaviors and underlying causes is both therapeutic and humane. The CPS model addresses extreme behaviors in a safe and thoughtful manner that for decades have been negatively labeled and treated with strict behavior modification, PRN medication and the most restrictive interventions of locked seclusion and restraints.

In recent years, the use of the most restrictive interventions has been negatively viewed and there has been a national trend to significantly reduce the use of chemical, physical, and mechanical restraints and locked seclusion to only the most emergent circumstances (Greene & Ablon, 2006). This trend has allowed staff to embrace alternate approaches to care and receptivity to the Collaborative Problem-Solving approach to patient care has grown. This is especially important as the majority of children admitted to more acute care settings have histories of abuse. Finding alternative interventions and approaches to care that minimize a child's exposure to locked seclusion or restraints, either by witnessing others being placed or by being placed themselves would greatly reduce the possibility of unnecessarily re-traumatizing the child (Greene & Ablon, 2006).

Having a philosophy that guides how patient care should be provided is essential to the success of any treatment program. Rather than the reward-and-punishment approach that has been favored by inpatient psychiatric units for years, Greene and Ablon (2006) believe that the CPS philosophy of "Children do well if they can" is one that

should be embraced in all settings, including inpatient care. From a nursing perspective, the Collaborative Problem-Solving approach compliments Peplau's psychodynamic nursing theory well and could easily be partnered as the guiding philosophy and theoretical grounding respectively in the care of children hospitalized on an inpatient psychiatric unit.

5.9 Recommendations and Implications for Future Research

The Collaborative Problem-Solving approach as an intervention is not a mainstream approach for inpatient psychiatric care as yet and there remains a gap in the literature as it pertains to the model's use with traumatized children.

Abused children have a higher rate of psychiatric symptoms, dysfunctional families, criminality, and substance abuse and need for psychiatric services (Baren, et al., 2008b). Incorporating the CPS approach into inpatient child psychiatric treatment programs would provide an effective and creative alternative for children with explosive, oppositional and defiant behaviors. According to Greene and Ablon (2006), the CPS approach could be applied to situations and patient populations not discussed in their book and begs for further research. This research should include the effectiveness of the CPS model with children with histories of abuse and with children hospitalized in inpatient child psychiatric settings. Unfortunately, the most recent literature search for studies involving the Collaborative Problem-Solving approach and children admitted to hospital-based child psychiatric units with or without histories of abuse did not yield any new research. The majority of settings utilizing the CPS model are school-based programs and outpatient settings. This may be due to the initial expense and the amount of time necessary to train all staff working on an inpatient unit.

Another consideration is the challenge of training staff new to the unit, especially in academic hospitals where turnover of medical students and residents necessitates ongoing education and supervision every few months. However, once the permanent staff working the unit have been trained, the turnover of staff could be managed by incorporating the CPS approach into their orientation to the unit with all trained staff being available to guide and support this model with the staff starting their clinical rotations.

There are multiple web sites and organizations devoted to the CPS model with recommendations for use. One such organization is *Lives in the Balance*, a non-profit organization founded by Ross Greene that advocates on behalf of behaviorally challenged children and their parents and caregivers, and provides free web-based education to those treating and caring for these children; resources that teach CPS interventions and approaches that are more accurate, compassionate and effective with explosive and behaviorally challenged children (Greene, 2012). In the absence of implementing an inpatient Collaborative Problem-Solving program, I believe this organization and the accompanying education, treatment strategies and tool kits available on the web site could serve as a wonderful resource for inpatient staff with parent teaching throughout hospitalization and as part of the discharge plan using the web site as one of the recommended post discharge referrals.

Psychiatric nurses as the primary caregivers of hospitalized children are perfectly poised to conduct this research, especially forensic nurses working with this fragile and underserved population of patients. Without thorough knowledge and understanding of the interventions and their effects on hospitalized children with trauma histories, the need

for change in both health care attitudes and treatment practices toward explosive and defiant children cannot be appreciated.

As much as childhood abuse, neglect, and trauma have been consistently associated with psychiatric illness in both children and adults, there remains a paucity of clinical research that correlates the understanding of childhood trauma and subsequent sequelae that contribute to adult health issues with the role of the nurse in supporting education and management of this specialized population (Waite, et al., 2010).

Research on nursing ideology that drives nursing care in child psychiatric inpatient treatment has been limited. Mental health nurses have not always been aware of the ethical issues and ideological approaches that have guided their clinical practice (Ellila, et al., 2007). This has caused concern and has raised questions regarding the position of ethics in child and adolescent nursing, especially when ethically problematic coercive treatment interventions have been frequently used as part of inpatient psychiatric care of minors (Sourander, et al., 2002).

Children and adolescents hospitalized in psychiatric units have mixed disorders, multiple diagnoses, and often have severe socioeconomic challenges and poor relationships in families (Ellila, et al., 2007). Nursing care has typically focused on activities of daily living. Ellila, et al. (2007) believed that despite attempts at providing child- appropriate approaches to care, it could be argued that these approaches were not grounded in any true understanding of the underpinning ideologies. One example from a Finnish study found that mental health nurses had tremendous difficulty identifying and articulating the ideological and theoretical background that guided their clinical practice

(Lindstrom, 1995). Those findings raised questions about the values and ethics on which psychiatric nursing practice was based.

Nursing theory and medical ethics are often taught as part of the program of study for Masters or Doctoral level education. Focus is generally more philosophical and academic in nature, with an older demographic of students with varying levels of expertise and years of experience. Teaching and incorporating nursing theory and medical ethics into one's practice, however should extend beyond the intellectual analysis found at this advanced level and should become part of the core curriculum of baccalaureate nursing education from which all other knowledge and skill sets are based. As nurses seek to define themselves and practice within a particular specialty, it would be important to impart a level of knowledge and understanding separate from practical skill that provides a framework of guiding principles for that specialty, an ideology from which to practice that remains in the forefront of that clinical nursing practice, always.

In an age where heightened risk management and safety regulations on the delivery of patient-centered care are juxtaposed with service excellence and patient satisfaction, it seems imperative that schools of nursing lead the charge and start connecting these dots for their students sooner rather than later: connecting nursing theory and medical ethics to practice, safety, critical thinking and judgment, decision-making, service excellence and service recovery, and to the delivery of compassionate and humane care well before clinical rotations, final exams, and especially before licensure occur. I believe when a nurse can articulate the “what and why” of care as it pertains to a sound theoretical framework, can deliver that care in a compassionate and

humane manner, and is confident that the rationale is sound and ethical, risk to the patient is minimized and increased patient satisfaction possible.

Although applicable to any nursing specialty, I believe this is a must for nurses that work with psychiatric patients, especially children who have been traumatized or abused, and that more research is needed on nursing ideology and ethics that drive nursing care and practice with this specialized and vulnerable population.

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